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SUMMER
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Canada's Declining Tourist Trade — *David Ivor* — 87

The Absent Partner in Labor-Management Discussions — *Wilfrid Sanders* — 97

Operational Research — *J. W. Abrams* — 104

Some Effects of Grade Labelling — *Patricia K. Norsworthy* — 117

Administration of a Collective Bargaining Agreement — *Wallace H. Clark* — 129

Newfoundland and Union — *Eric A. Seymour* — 139

Administrative Training and the Case Method — *R. K. Ready* — 144

Book Review — 156

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About Our Authors . . .

The lead article of this issue is a comparative study of Canada's tourist trade. Its author, **David Ivor,** has been Associate Professor of Economics and Political Science at U.W.O. since 1946. Dr. Ivor graduated from U.W.O. and London School of Economics. He was formerly employed by the London Life Insurance Company and served overseas in the Canadian Army during World War II. His comments are, in part, based upon a study made for the Federal Department of Resources and Development in 1950.

The expanding field of operational research is discussed by **Dr. J. W. Abrams,** who is now Deputy Director for Operations Evaluation, Operational Research Group of the Defence Research Board. Dr. Abrams studied at University of California, Leiden University, Tartu University, University College, London, and Harvard University, and has taught at University of California, University of Manitoba, and Wesleyan University. During the war he was Squadron Leader with the first Operational Research Team in the RCAF, working principally with the RAF in the United Kingdom.

Current thinking concerning executive training and the case method has been appraised by **R. K. Ready.** Mr. Ready, at present a Research Associate at Harvard University Graduate School of Business Administration, attended University of Kansas and received his M.B.A. from Harvard. He has been a lecturer in administrative practices, industrial relations, marketing, and personnel at the U.W.O. School of Business Administration for the past two years.

Wilfrid Sanders came to Canada as a child from Grahamstown, South Africa. He attended University of Toronto and has been associated with *The Toronto Star, The Financial Post,* and *The Wall Street Journal.* He is

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Communications . . .

Consumer Durables

Sir:

One recent development which may have some bearing on the market for consumers' durable goods (and on the general Canadian market for consumption of goods) should be noted. I would be grateful if you were to publish the following remarks as an addendum to my article on consumer durables [*The Business Quarterly,* Spring, 1952] as they may be instrumental in helping to correct what might easily be a false impression about present conditions.

The market for consumers' durables has hardened somewhat within the past few months and there are strong reasons for believing that a further improvement will take place in 1952 and in early 1953. The main reason for this expected improvement is changed conditions in the American market. As was demonstrated in my article, this market is an important determinant of the level of business activity in Canada, particularly in the case of consumers' durable goods.

The approaching Presidential elections in the United States can be expected to stimulate the outflow of funds from the United States Treasury and so result in the development of inflationary pressures. It has always been assumed (and experience seems to bear it out) that the business community and the public at large are much more inclined towards mild inflation and its concomitant prosperity than towards any type of deflationary tendency. It is almost a certainty that one of the important considerations in the Presidential elections will be the attitude of the two parties towards business conditions. Fortunately the party in power will be able through mild inflation to create conditions which appear more prosperous, and will in this manner attempt to retain its office. If this plan materializes, there can be little doubt that it will have a favourable effect on the Canadian market by removing some of the slack existing in the depressed areas of the United States.

To this tendency must be added the normal inflationary effect of the excess of outflow over receipts by the United States Treasury during the normal year. In the second, third, and fourth quarters of 1952, the flow of cash out of the United States Treasury (based on the estimates of the Joint Committee on Internal Revenue Taxation) will exceed income by about one and a half billion in the second quarter, three and a half to four billion in the third quarter, and six and a half to seven billion in the fourth quarter.

The American market will be strengthened not only because of the increased expenditures of the United States Government and because collections are heavily centred in the first quarter, but also because the present administration is encouraging pay raises, discouraging credit and other restrictions, and allowing increased freedom to banks in making loans for business or consumer purposes. (It is also expected that the Reconstruction Finance Corporation will increase its activity.)

This easing of the tension in the American market and so in the Canadian market can only be considered temporary since by the first quarter of 1953 (when tax revenues generally exceed outflow) the Presidential elections will be over, and the reasons for stimulus will have disappeared. However, this period of relative pressures will be an important aid to those corporations attempting to make the adjustments which appear on analytical grounds to be so necessary.

GORDON K. GOUNDREY

Toronto, Ontario

About Our Authors . . .

co-owner of the Canadian Institute of Public Opinion (Gallup Poll of Canada) and of Sanders Marketing Research and Canadian Opinion Company and is President of the Advertising and Sales Club of Toronto, past Vice-President of the Toronto chapter, American Marketing Association, and former Director of the World Association for Public Opinion Research. His article deals with recent trends in public opinion concerning labor-management relations.

Wallace H. Clark, Vice President—Industrial Relations of Ford Motor Company of Canada, has been associated with the automotive industry for over twenty-five years, and has been responsible for developing human relations policies during one of the most interesting and progressive periods in the history of Ford of Canada. He is a keen student of labor relations and labor legislation, and is well qualified to discuss the administration of labor-management agreements.

The Quarterly's Managing Editor, **Patricia K. Norsworthy,** has prepared an interesting summary of some effects of Canada's grading requirements. Apart from her editorial responsibilities, Miss Norsworthy is Research Associate in the Division of Research, U.W.O. School of Business Administration. She studied commerce and administration at Queen's University and Boston University.

A Newfoundlander's attitude concerning the economic effects of union with Canada is clearly expressed by **Eric A. Seymour.** Mr. Seymour has been associated with the St. John's *Evening Telegram* since 1925 and has been Foreign News Editor for the past fourteen years. He helped organize the Newfoundland Press Club and became its first President, and is a Director of the National Press Club of Canada. He is a Reuters representative and contributes to the *Globe and Mail, Saturday Night,* and other periodicals.

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Canada's Declining Tourist Trade

David Ivor

Canada is generally considered to be a great vacationland, but income from tourists is steadily falling off. Some intriguing reasons for this decline and some sound suggestions for positive action are presented in this article.

THE tourist trade can be described as the business of furnishing goods and services to tourists. Tourists can be described as persons travelling for pleasure or culture. Since this article is concerned with foreign rather than domestic tourists in Canada, and since the economic significance of the foreign tourist trade stems from the fact that the tourists are spending money here which was earned in another country, it is justifiable to include as foreign tourists all foreign entrants, except immigrants, whether they are travelling on business or pleasure.

There are two aspects of Canada's foreign tourist trade which merit close attention. One is the impact of foreign tourist expenditures on the whole Canadian economy; the other is their impact on particular sectors of our economy, i.e. on particular industries and occupational groups.

This article will deal with the first of these aspects. The reason is that there exists no reliable information about the way in which tourist expenditure is distributed for various kinds of goods and services. In other words, we have no breakdown of the tourists' dollar. While it is possible by roundabout methods to make a shrewd guess about how much foreign tourists spend on lodging, on meals, food and beverages, on gasoline, automotive services and transportation, on entertainment and on merchandise, and even to break down these figures into wages and foodstuffs, etc., we would be penetrating so far into the realm of conjecture that the resulting figures could be very misleading. Only a government agency such as the Dominion Bureau of Statistics could conduct the investigation necessary to secure reliable information, and it is deterred by the likelihood that such a survey would annoy or antagonize the foreign visitors whose goodwill we must cultivate.

Growth of Tourism

While the tourist trade affects a large number of industries, it is primarily concerned with the provision of economic services rather than goods. It has been observed that in countries with rising standards

of living, a larger and larger proportion of productive resources is being switched from the production of goods to the production of services. In the U.S.A., for example, the percentage of the working population employed in service industries (transportation, trade, finance, professional and personal services and in clerical occupations) rose from 25 per cent in 1870 to 39 per cent in 1920 and to 47 per cent in 1930. In Canada comparable figures were 20.7 per cent in 1901 and 31.5 per cent in 1941. The tourist movement is perhaps the best single example of the tendency in modern times for consumers to devote a larger proportion of their total resources to economic services rather than goods.

Two other factors, related to our advancing state of technology, our rapid accumulation of capital and our vastly increased output of economic goods, have accelerated the growth of tourist travel. One is the mass production of automobiles at prices within reach of most people; the other is the reduction in hours of work and the great extension of the "holiday with pay" idea to both salaried and industrial workers. The means and the opportunity for recreational travel have been created in abundance.

All of these influences have served to make the tourist trade occupy a much more significant place in our economy.

Economic Effects of Tourist Trade

Why should a country such as Canada be desirous of attracting tourists from other countries? There are several reasons.

In the first place, expenditures by foreign tourists improve a country's current balance of international payments in precisely the same way as exports of merchandise. However, it should be clearly understood that a favourable balance of payments is not an end in itself. Mercantilist and protectionist ideas are so widely held by the public today that it seems necessary to stress the fact that the citizens of this country are depriving themselves of goods and services when they sell these things to foreign tourists. The benefit to us lies, not in the sale of these things, but in the foreign exchange we receive therefrom which enables us to buy goods and services from foreign countries — things from which we expect to derive more satisfaction than from the goods and services sold to the foreign visitors. In short, the international tourist trade is based upon specialization and exchange just as much as trade in commodities and presumably it is carried on because it provides a measure of "consumer surplus" to both ourselves and the foreigners. Incidentally, this is the principal argument against imposing any restrictions on expenditures by Canadians in foreign travel.

Secondly, expenditure by foreign tourists increases the national monetary income of the people of Canada in the same way that exports of merchandise do.

Thirdly, the tourist trade enables us to "sell" resources which do not diminish in supply. When we ship out mineral products we are parting with resources that cannot be replaced. The same thing is true, to a lesser degree, with forest and agricultural products unless we take strong action to conserve and renew them. But a country's scenery and climate and historical sites and sporting facilities which are supplied to the foreign tourist, for a "consideration," never wear out. Switzerland offers us an excellent example of a country relatively poor in material resources which has been helped to maintain a relatively prosperous economy by the sale of its indestructible scenic attractions to foreigners.

Fourthly, the tourist trade is a stabilizing influence during an economic depression. Although our exports of merchandise slumped sharply during the years 1930 to 1932, our receipts from tourists held up remarkably well and helped to ease our difficult position. The reason is that most Canadian exports are producers' goods, the demand for which fluctuates sharply, whereas tourists purchase consumers' goods and services which are much less subject to the movements of the business cycle. However, it is interesting to note that tourist travel is very sensitive to war or threats of war, so that there was a great decline in foreign tourist expenditure in the period 1940-45.

Finally, there are less tangible arguments for promoting international tourism. Visits by citizens of other countries result in a better appreciation of the resources and investment opportunities of Canada. They stimulate political and economic interest in our country and, since it is in our interest to make our visitors feel welcome, this helps to preserve amicable international relations.

Our Failing Tourist Trade

Granted that the international tourist trade is beneficial to Canada, the question naturally arises, "How is our foreign tourist business faring?" To answer this we must look at the figures supplied by the Dominion Bureau of Statistics.

Expenditure by Foreign Tourists in Canada and Balance of Payments

(Millions of dollars)

Selected Years	*Expenditure by Foreign Tourists*	*Expenditure by Foreign Tourists (in dollars valued at 1935-39 prices)*	*Balance of Payments on Tourist Account*
1926	$152	$125	$53
1931	153	140	82
1933	89	94	45
1937	166	164	79
1942	81	69	54
1945	165	138	82

1948	280	180	145
1949	286	177	92
1950	275	165	49
*1951	271	147	-9

*Preliminary

A glance at the first column, showing expenditure by foreign tourists, might convey the impression that, apart from a slight decline in 1950 and 1951, we were improving our position. However, it is unrealistic to compare pre-war and post-war figures without taking into account the very considerable fall in the value of the dollar. When we do, as in the next column, we see that the quantity of goods and services purchased by foreign visitors to Canada in 1950 was the same as in 1937 and the quantity purchased in 1951 was not much above the 1931 figure. As for the balance of payments, except for the year 1948 when strict exchange and import restrictions precluded much Canadian travel abroad, there is practically no change between the pre-war and post-war figures. In fact, the first unfavourable balance of payments on tourist account in the 25 years of collecting these statistics appeared in 1951.

The conclusion is inescapable that 25 years of effort to improve our foreign tourist trade have completely failed. Our advertising and publicity, our attempts to improve roads and accommodation have resulted in no perceptible increase in our tourist revenue, after making proper allowance for changes in the price level.

During the proceedings of the Special Senate Committee on Tourist Traffic in 1934, which inaugurated a more vigorous attempt to attract tourists, there were references by several members and witnesses to $500 millions as a suitable objective in foreign tourist revenue. It is obvious that we are no closer to that objective now than we were then.

In view of the fact that before the war over 90 per cent of our tourist revenue came from Americans and that now about 97 per cent is derived from their visits, it is apparent that we should study American tourist behaviour to see what has happened.

Let us compare 1929 and 1950, both years of high per capita income in both our countries. In 1929, United States citizens spent $483 millions travelling in foreign countries; in 1950, $727 millions. In 1929, we received $184 millions or 38 per cent of this expenditure; in 1950 we received $260 millions or 36 per cent of this expenditure.

Now this is contrary to what we might reasonably expect. In fact, one would think that Canada's share of American foreign travel expenditure would have increased. The economic depression of the thirties should have caused a substitution of low cost — i.e. nearby — foreign travel for European trips. Our highways and accommodation, advertising and publicity, have improved. The democratization of travel and

rapid development of holidays with pay for the working population should have led to a tremendous increase in cheap motor travel in foreign countries contiguous to the United States. The postwar scarcity of good travel facilities and accommodation in Europe should have favoured travel in this country. Despite these things, Canada is now getting a smaller share of the American travel dollar than she obtained 20 years ago.

Contrast our position with that of Mexico which occupies a place with respect to American foreign travel very similar to our own. In 1929 Mexico received only $36 millions of U.S. foreign travel expenditure or 7½ per cent of the total; in 1949 Mexico received $135 millions or almost 20 per cent of the total. It is admitted that Mexico has greatly improved its tourist facilities in the interval and that it has an advantage regarding climate, but the fact remains that they have spectacularly improved their position and we have lost ground relatively. Surely in this country we could strive to create some of the foreign atmosphere which makes Mexico so attractive to the visitor.

Actually we know that the very great increase in recreational travel by Americans which has been manifested in the growth of investment in private automobiles and sales of gasoline and the swift development of lodging facilities such as the motor court or "motel" has been largely confined to the United States. The total amount spent by American travellers in Canada and Mexico annually has increased by only $186 millions in 20 years.

However, there is one bright spot in the gloom. On a basis of absolute size of receipts from foreign tourists Canada still appears to lead all countries of the world. The International Monetary Fund Balance of Payments Yearbook shows that seven countries of the world habitually show favourable balances on foreign travel account: Canada, Finland, France, Ireland, Italy, Mexico and Switzerland. Allowing for the considerable inaccuracies in the figures, Canada, Mexico and Switzerland emerge as countries where tourism can be declared to be really important. Of these, Mexico is well in the lead with tourists accounting for about 27 per cent of total receipts on current account. Probably Switzerland comes next, though accurate evidence to support this statement is not available owing to the fact that Switzerland does not compute an official balance of payments. Canada comes third with about 5¼ per cent of all current receipts coming from tourists.

Thus, we see that Canada's stake in the tourist business is very important. In 1950 only newsprint ($486 millions), wheat ($326 millions) and lumber ($291 millions) exceeded our tourist receipts of $275 millions. Therefore, it behooves us to see that our position is maintained or improved and not allowed to retrogress as it shows signs of doing. Evidence of this retrogression is found in the fact that whereas in 1931

our receipts from tourists accounted for 15.74 per cent of our total current receipts from abroad, this percentage declined to 10.23 in 1939 and in 1951 amounted to only 5.23 per cent.

Average Tourist Expenditure

It is curious that, despite the decline in revenue from foreign tourists, the number of tourists has been increasing. In 1950 there were 23.5 million border crossings by Americans into Canada compared with a pre-war figure of about 16 to 18 millions. The obvious conclusion is that average expenditure per visitor has been declining. The following table is of interest in this connection.

Expenditure of U.S. Citizens Visiting Canada

(Figures in brackets are in terms of dollars valued according to the Cost of Living Index, 1935-39 = 100)

	1947	*1948*	*1949*	*1950*	*1951*
Ave. expenditure per person	$10.63	$10.66	$11.06	$11.04	$10.30 (approx.)
	(7.84)	(6.88)	(6.88)	(6.63)	(5.58)
Ave. expenditure per person (Long term traffic only)[1]	54.63 (40.32)	55.56 (35.84)	56.89 (35.39)	57.77 (34.70)	
Ave. expenditure per person per day (Motorists on Motor Vehicle Permits only)[2]	4.15 (2.68)	4.32 (2.79)	4.49 (2.78)	4.61 (2.77)	

Related to the above table are the following:

Average Length of Stay in Days of U.S. Motorists in Canada

(Includes only motorists entering under Motor Vehicle Permits)

	1947	*1948*	*1949*	*1950*
Per Car	5.39	5.28	4.99	4.80
Per Person	4.82	4.67	4.54	4.39

Average Number of Persons Per Car

(Includes only motorists entering under Motor Vehicle Permits)

	1947	*1948*	*1949*	*1950*
Persons per car	3.00	2.99	3.00	2.96

The first thing that strikes one about these tables is the incredibly low expenditure per person and per car per day for U.S. touring visitors. After making allowance for the fact that about 20 per cent of American visitors come to Canada to visit friends and relations (according to field surveys) and presumably spend a portion of their visits in Canadian homes, that there are a proportion of children in the total and that included in the group are a few summer cottagers whose average expenditure per person per day is only about $2.50, it is still astonishing to

[1]Excludes motorists staying less than 48 hours and in-transit and other short-term travellers.

[2]Motor Vehicle Permits are required only when the motorist is staying more than 48 hours, leaving by a port other than the port of entry or travelling beyond the jurisdiction of the port of entry.

find that an average party of three American motorists can visit Canada on tour for 5 days and spend only $13.50 per day, or $4.50 per person. Assuming a rough breakdown of this daily expenditure into 25 per cent for accommodation, 25 per cent for meals, 15 per cent for gasoline and service, 25 per cent for merchandise and 10 per cent for entertainment and miscellaneous items, the expenditure per person works out at—

Meals	$1.12	
Accommodation	1.12	
Gas and Service	2.02	(for the party)
Merchandise	1.12	
Miscellaneous	.45	

It should be realized that these are average figures and many tourists who patronize resort hotels spend far more than the average. If these large spenders are deducted from the total, the average for the large remaining group would probably be less than $4 per day per person. In other words there is a very large group of American tourists who manage to spend practically nothing during their trip into Canada. Evidently they exist on sandwiches and hot dogs, live in the very cheapest lodgings or stay with friends, spend next to nothing on merchandise and arrive in Canada with tanks full of gasoline and depart with them empty.

To make matters worse, these tourists show a tendency to shorten their stay in Canada which, of course, reduces their expenditures.

Conclusions

What conclusions can we draw from our findings?

In the first place, although Canada is one of the leading countries of the world in respect to revenue from foreign tourists, we have not shared in the general growth of tourist travel. Though more tourists are coming, their expenditures are declining. There are two ways to boost their expenditures: (1) by lengthening their visits to Canada and (2) by inducing them to spend more per day. Let us examine these in turn.

According to surveys conducted for the Government on U.S. vacation habits, 33 per cent of American vacationists coming to Canada expect to spend between one and two weeks away from home and 57 per cent more than two weeks. Yet our tables show that in 1950 the average length of stay per person in Canada was only 4.39 days (including only motorists entering under Motor Vehicle Permits). We must conclude that these vacationists are spending less than one-third of their vacation periods within our borders. Obviously, then, we must induce them to stay longer.

How can we do it? For one thing we need more and better highways in strategic locations. The chief complaint of United States motor-

ists, as surveys show, is the poor condition of our roads. Only 3½ per cent of our roads are paved with either concrete or bitumin. Many of these are in rough shape and most of them are in an area not more than 150 miles from the United States border. Moreover, most of the good highways run east and west between border points and so do not penetrate the country to any considerable degree. The proposed Trans-Canada Highway may improve this situation, but north and south paved highways must be constructed to provide exit and entry points for the Trans-Canada. If we can lure our foreign visitors to take long circular motor trips into the hinterland where, incidentally, our finest scenic attractions are to be found, we should be able to prolong the length of their visits considerably.

Good accommodation in the medium-low priced field is also very important. The Dominion Bureau of Statistics estimates that up to 254,000 American travellers require sleeping accommodation on an average August night in the peak of the season. American tourists will not tolerate the inferior type of accommodation which was prevalent ten or fifteen years ago and which is still all too common. For every complaint made regarding over-charging for inferior lodging, there are many more who do not complain but simply cut short their Canadian vacations and vow not to spend another vacation in Canada. The survey of hotel and other accommodation made during last year's Census will reveal whether there is a shortage. If there is, the question arises whether provincial governments should subsidize or otherwise encourage investment in new tourist accommodation, a practice which is common in Europe. There is also need for uniform standards for, and grading of, tourist accommodation across Canada.

To induce our visitors to stay longer we must improve our restaurant meals. Americans are used to good food — not good plain food but rather good food that is different and attractive. Not only is American cooking a composite of the cooking of many nationalities but the United States produces a wide variety of fresh fruits and vegetables which are sold at lower prices than in Canada. The three major complaints of tourists against Canadian restaurant meals are that the food is flat and unattractive, that there is too much fried food and that there is a lack of fresh vegetables in the summertime. Canadian restaurant proprietors are very prone to serve canned foods, even in season, to reduce labour costs.

Much money has been spent by Canadian governments on public parks. However, they are not attracting a sufficient number of visitors because of poor roads to the approaches of most parks. Moreover, they lack sufficient good overnight accommodation. Although many of our historical sites have been marked by tablets and monuments, many of these are so inconspicuous and situated so far from the highways that visitors are quite unaware of their presence.

Turning now to our second problem — inducing tourists to spend more per day — it would appear that we must try to sell more merchandise to our foreign visitors.

Tourist purchases may be classified as (1) day-to-day necessities such as papers, magazines, tobacco, wearing apparel, sporting equipment, etc., (2) souvenirs such as postcards, paper weights, spoons and other trinkets, (3) gifts for friends at home and (4) Canadian and imported goods for use at home.

There is not much hope of increasing sales of goods in classes (1) and (2). Most day-to-day necessities are dearer in Canada than in the U.S.A., and most souvenirs on display are tawdry trash which repel visitors. However, there are two classes of goods for home use or as gifts where sales could be expanded.

One of these consists of distinctively Canadian wares such as Hudson's Bay blankets and Murray Bay homespuns. We need a much wider range of these goods and of typically Canadian handicrafts. With them we could capitalize more fully on the almost universal desire of tourists to "take something home" with them.

The other consists of imported goods on which Canadian customs duties are lower than American duties — suitings and woollen clothing, gloves, smokers' supplies, silk goods, jewellery and ornaments, sportsmen's goods, dolls and toys, perfumes, rugs, linens, china, glassware, cutlery, art goods, leather goods and clocks and watches. Although the manufacture of these imported items does not directly enhance the incomes of Canadian workers, their sale does give a large amount of employment to clerical and manual workers in shipping, railroad and distributing houses. Since 40 to 75 per cent of the selling price of articles of this sort goes to pay for distribution services, it will be seen that purchases of these goods by foreign tourists increases our national income to a considerable degree.

However, we must not be led into the error of thinking that goods which are attractive to us will necessarily be attractive to Americans. They have a rather different pattern of expenditure. For example, they have become accustomed to wearing clothes of cotton, nylon and rayon of less formal appearance than the woollen garments worn by most Canadians. They use cheap California pottery on their tables and so many of them do not fully appreciate the quality and beauty of fine English china. The same thing can be said of linens and blankets. As a result, unless the average American visitor can be educated to appreciate the superior goods we have to offer, his merchandise purchases will tend to be restricted to necessities. This education of American taste is a job for our merchants, perhaps assisted by the travel advertising of our governments and transportation companies.

Though much more could be said about many aspects of the tourist industry, some conclusions may be arrived at here. (1) The foreign tourist trade is of great economic benefit to Canada. (2) The volume of tourist trade is considerably below what we should reasonably expect. (3) The decline in tourist expenditures is due to the decreasing average expenditure per visitor and the shortening of the average length of stay in Canada. (4) The length of stay of foreign visitors can be increased chiefly through the provision of better highways in appropriate locations and improved accommodations and meals. (5) Average expenditure per day can be increased by educating our American visitors to appreciate our imported merchandise and by development of typically Canadian consumer produce.

The Absent Partner in Labor-Management Discussions

Wilfrid Sanders

Too little attention is paid to the role of public opinion in labor-management disputes, says Mr. Sanders. He notes that the trend of public favor in recent years has been away from organized labor and toward "big business", and reflects upon probable reasons for the change.

ONE of the many things about our economy which "the-man-from-Mars" would have difficulty understanding, is the fact that the population segment with the greatest stake in the outcome of labor-management disputes, is very, very seldom represented at the conference table. "Segment" is hardly the word, inasmuch as this absentee shareholder is the general public itself.

Labor-management disputes represent one of the few remaining areas in which "the public be damned" attitude of early industrialism still seems to persist. The housewife who pays more for a product because the factory which makes it has gone on a five-day week, has had absolutely no say in the disputes and discussions which led up to the five-day week. The businessman who suffers serious inconvenience and financial loss because his 'plane reservation is cancelled, has had no voice in the oil industry strike, thousands of miles away, which caused the oil shortage which, in turn, caused the cancellation of the reservation. In brief, the fact that industrial disputes are a three-way affair — management, worker, *and* consumer — is more often than not overlooked. Yet the consumer, the public, does have definite attitudes on labor-management matters, and it is the aim of this article to summarize some recent trends in this area.

The CIPO Polls Public Opinion

For eleven years now, The Canadian Institute of Public Opinion has been taking the public pulse on many issues, including public attitude toward management and labor. The Institute, affiliated with similar Institutes in eleven other democratic countries, uses sampling techniques, which, with all their admitted drawbacks, are the best available method of measuring public opinion on a national scale, short of a public refer-

endum, or plebiscite, in which every eligible voter would go to the polls. (In most plebiscites, only about two-thirds do.)

During the eleven-year period in which systematic polling of public opinion has been going on in Canada, industry has passed through almost every conceivable situation, short of a general depression. There were the war years, when citizens, including labor and management, curtailed their generally accepted privileges, and operated under a tight control by government. Then there were the uneasy years as the war slowly approached its end, years in which the general public was fearsome of postwar depressions and unemployment, and labor was understandably jealous of any evidence that its hard-won gains would be permanently lost. Then followed years of generally unexpected prosperity, rising living costs, supply shortages and inflation. From a researcher's point of view, these changing conditions have provided a wonderful laboratory for studying public reactions.

Changing Attitudes Toward "Big Business"

From the first the general public has shown that it approves and supports the labor union principle, the right of labor to bargain collectively. To the simple question, "DO YOU APPROVE OR DISAPPROVE OF LABOR UNIONS?" a majority (which in 1946 was as high as 61%) replied "approve". Unions, therefore, were not originally working in a hostile atmosphere. Actually, there is evidence for believing that unions were, in the war and post-war years, better off in this respect than was management. Labor, generally, had better public relations than so-called "big business". For example, the largest group of Canadians felt that neither labor, nor business should have more influence on government than the other, but if you forced an answer, twice as many voters would say that labor should have more influence than would say that business should have the greater influence.

A few months ago the Institute repeated a question it had first put to the public back in 1946. The question was this: "AT THE PRESENT TIME, WHICH DO YOU THINK HAS THE MORE INFLUENCE ON THE LAWS PASSED IN THIS COUNTRY — BIG BUSINESS OR ORGANIZED LABOR?" The trend represented by the two surveys indicates that the public, in the six-year interval between them, has lessened its belief that "big business" has the greatest influence.

	1946	*1952*
"Big business" has greatest influence	66%	53%
Organized labor	18	25
No difference	5	6
No opinion	11	16

Big business, then, in the eyes of the public, still actually has the greatest influence on government, even though the majority who think so have dropped from two-thirds in 1946, to just over a half today.

But is this as it should be, in the public's philosophy? The answer is "no". The way the public views it is that while neither group should have a greater influence, if a choice has to be made, organized labor should have a greater voice. But here is the interesting thing: fewer people think so today than thought so six years ago.

To get at this aspect, the Institute, in both the 1946 and the 1952 study, followed the first question cited above with this one: "IF A CHOICE HAD TO BE MADE, WHICH OF THESE (big business or organized labor) DO YOU THINK *SHOULD* HAVE THE GREATEST INFLUENCE?" Eliminating those with no opinion, and those who insisted that neither group should have more influence than the other, the trend in the six-year period is shown in this table:

	1946	*1952*
Organized labor should	81%	70%
Big business should	19%	30%

Two things, it seems to the writer, are evident from this particular study. First, organized labor has a better public relations atmosphere than has business, but, secondly, this atmosphere is less friendly to labor than it was six years ago. This conclusion is confirmed by other evidence. On the evidence available it seems that usually, when a strike impinges itself on the public, public sympathy (which, we have seen, is normally on the side of labor) lessens.

Effects of Recent Strikes

A concrete example of this was provided by the railway strike in the summer of 1950. Seldom has any strike penetrated the lives of the Canadian public as this one did. Luckily, just before the strike, the Institute had measured national attitudes toward some aspects of labor. Immediately after the strike, the same questions were repeated. It would be logical to conclude that any differences between the two studies would be due to the strike.

The first question asked before and after the rail strike went like this: "SPEAKING GENERALLY, AND THINKING OF CANADA AS A WHOLE, DO YOU THINK LABOR UNIONS HAVE BEEN A GOOD THING, OR A BAD THING, FOR THIS COUNTRY?"

	Before rail strike	*After rail strike*
A good thing	62%	59%
Not a good thing	14	17
Qualified answers	11	10
No opinion	13	14

Certainly, it could not be said that the rail strike improved the public relations of organized labor, even though a majority of voters still adhere to their belief that the principle of organized labor is sound.

A second question asked a sample of the voters whether it was felt that labor unions were getting "too strong", or not. Before the strike a majority of those with an opinion felt that unions were not getting too strong. After the strike, opinion was divided, exactly 50-50.

Again, the Institute polled attitudes in the city of Toronto towards the street-car strike in the early months of this year. Here was another labor dispute which affected nearly all segments of the public, and again it was found that the strike had done labor's relations little good.

Labor Leadership Held Suspect

In any discussion about the public's attitude toward labor matters, clarification should be made as between organized labor, in a rank-and-file sense, and labor leadership. The public is considerably more sympathetic to labor itself than it is to labor's leaders. Tests have shown that the phrase "labor leaders" is almost an emotionally charged word, in that a different response is obtained from questions which start, "Labor is asking, etc.," than from questions which start, "Labor *leaders* are asking, etc."

The general public, both in the United States and Canada, is inclined to be suspicious of labor leadership. A few years ago the Canadian public, through a representative sample, was asked whether it thought labor was being "wisely or unwisely" led. Answers of labor union members (or their immediate families), of management (and their families), and of non-union members were tabulated separately, to permit a comparison of the three groups. Here are the results:

	Union Members	*Non-union Members*	*Management*
Wisely led	53%	26%	20%
Unwisely	28	53	72
Undecided	19	21	8

The fact that, in the above table, over one in four among the union members felt their leadership was unwise, will not come as a surprise to those who have studied these matters. Time and time again the polls have found a wide gulf between the opinion and attitudes of rank-and-file union members and the publicly expressed views of their leaders.

Another interesting thing which emerges when one looks back at the findings of the polls has to do with the well-known psychological fact that people are apt to think in stereotypes, or symbols, and that judgments are often on this basis. This fact has been well understood and capitalized on by labor leaders (as it has by politicians generally). A good example of this was provided at the time the United States Congress was debating the Taft-Hartley Act, which was aimed at curbing the powers of organized labor. During the discussion the American Institute found that if it polled attitudes towards the Taft-Hartley Act,

per se, it found large majorities among the ranks of labor opposing the Act as a vicious piece of legislation. But when no reference to the *name* of the act was made, and attitudes toward the individual clauses were measured, rank-and-file labor approved the things this Act set out to do.

In Canada, under any name, the closed shop smells sweet to union members, but sour to the general public. In one recent study, the question was asked: "IN A FACTORY WHICH HAS A UNION, SHOULD THE WORKERS WHO ARE NOT MEMBERS BE FREE TO STAY OUT OF THE UNION IF THEY ARE GETTING UNION RATES OF PAY?"

	Union Members	*Non-union Members*
Yes, should be free to stay out	25%	48%
No, should not be free	65	30
No opinion; unfamiliar with issue	10	22

On the other hand, the Rand Formula, whereby non-union members would pay union fees, if enjoying union advantages, is held to be fair by a majority in both union and non-union ranks.

It is safe to say that in its attitude towards both labor and management, the general public tries to be fair *on the information made available to it.* So far this article has produced evidence to indicate that the public relations trend of labor is not as satisfactory as that of management. It would not be fair to labor to assume that this situation exists simply because labor has not as good a case as has management. It is quite possible that, in the vital area of communicating facts to the general public, management has media not available to labor.

General Public Closer to Management

But, whatever the cause, the situation looks even dimmer for labor's public relations when it is realized that among this same general public, the labor group outnumbers management by huge odds. Of all those people gainfully occupied in industry, 97 per cent are employees; only three per cent employers. With such a weight of sheer numbers in their favor, one would expect the scales of public opinion to tip in favor of labor.

A few years ago these two questions were asked of a representative cross section of Canadian adults: "SOME PEOPLE SAY THERE ARE TOO MANY TROUBLE MAKERS AND AGITATORS AMONG UNION LABOR LEADERS. OTHERS SAY THAT THIS TALK IS ONLY ANTI-LABOR PROPAGANDA. WHAT ARE YOUR VIEWS ON THIS?" and "SOME PEOPLE SAY THAT MANAGEMENT IS TOO SELFISH AND UNREASONABLE. OTHERS SAY MOST OF THEM ARE SINCERELY TRYING TO CO-OPERATE WITH LABOR. WHAT ARE YOUR VIEWS ON THIS?" The sample was broken into

three groups: employers, union members and their immediate families, and the general public. To the first question, half the general public felt the charge was true, and even among union members, 31 per cent (almost one in three) agreed with it. Here are the complete results for the three population groups:

	Employers	*Organized Labor*	*General Public*
True	58%	31%	50%
False	12	42	23
Other replies	15	7	6
No opinion	15	20	21

To the second question, one in ten among employers felt that management was too selfish and unreasonable. More than half the organized labor group felt so.

	Employers	*Organized Labor*	*General Public*
Management unreasonable, etc.	10%	51%	34%
Management sincere	68	25	36
Other replies	10	5	7
No opinion	12	19	21

Here again, and in spite of weight of numbers, the vote comes out more favorable to management than to labor. The views of the general public are closer to the views of management than they are to the views of labor.

In other words, the ideological distance between management and labor is greater than the ideological distance between management and the general public. This fact presents a challenge to labor leadership—in fact to all those Canadians who sincerely believe in the general principles of organized labor. It is having its inevitable effect on the way the general public looks at unionism and union leadership today. For one thing, today, nearly half the people of Canada think it is time labor leaders stopped working so hard for higher wages and shorter hours; and four in five of those who hold this view have very definite ideas as to what they think labor leaders should concentrate on now.

Unions and the Higher Wage Issue

A few months ago this question was put to the general public through sampling methods: GENERALLY SPEAKING, LABOR UNIONS HAVE BEEN WORKING FOR SHORTER HOURS AND HIGHER PAY. DO YOU THINK THEY SHOULD CONTINUE TO WORK FOR HIGHER WAGES AND SHORTER HOURS OR NOT?" The vote:

Yes, should continue	35%
No, should not continue	47
Qualified, and no opinion	18

Among the broad ranks of labor itself (organized and non-organized)

no less than 33% feel that union leaders should concentrate on something else than higher wages and shorter hours. Among union members themselves, more than one in four feel this way. The following table shows the results of this study, broken down as between union members and those voters who are not members of a union:

	Union	*Non-union*
Yes, should continue	61%	27%
No, should not continue	26	52
Qualified, and no opinion	13	21

The plurality who felt labor leadership should concentrate on something else was asked for suggestions, and four in five had them. Here were the leading suggestions, in order of mention: (1) improved working conditions; (2) holding the wage line where it is; (3) protecting the rights of labor; (4) giving an honest day's work; (5) settling arguments peacefully (i.e. without strikes); (6) keeping the cost of living down; (7) encouraging maximum production; (8) working for pension plans; (9) promoting good relationships with management. Surprisingly absent, incidentally, was any sizeable number suggesting that labor leadership might well devote some energy toward instilling a sense of pride in craftsmanship among skilled and even semi-skilled labor groups.

This particular study was discussed by a labor leader in a broadcast following its publication. In analysing the findings, this leader maintained that union executives were bound to do only what they were told to do by the rank and file. He said, "There seems to be a lot of misunderstanding of exactly what paid officials in the trade union movement can, and cannot, do, and exactly what powers they do have. . . . Anyone who knows anything about how a union conducts its business knows that a paid official in any union does what he is told to do by the membership, or he is soon looking for another job." He went on to point out that organized labor has been interested in many other things than wages and hours of work — things like Workmen's Compensation; Unemployment Insurance; education; factory inspection, and accident prevention; Old Age Pensions — but concluded that the "chief concern of most unions is seeing that their membership get sufficient pay in their pay envelopes to take care of the present high cost of living, and I would be wrong if I even suggested that this is not the case."

If labor continues to make this its *chief* concern, there seems to be little doubt from the evidence at hand that it will, at the same time, increase the public relations job it apparently has to do. Whatever the cause — whether it be the basic attitude of labor leadership, or the fact that labor is not getting its story across to the public — the evidence seems to be that the "climate" of public opinion is less favorable to organized labor today than it was. And a trend in public opinion, the absent partner in labor-management disputes, is a very hard thing to stop!

Operational Research

J. W. Abrams

Research on the operation of equipment as opposed to conventional research leading to the development of new equipment was one of the unsung developments of World War II. Application of this idea to business and industry has lately caused considerable comment.

SOME thirteen years ago in Fighter Command, Royal Air Force, the experiment was made of placing a few selected scientists in contact with the actual operations of the Command. Radar was just coming into use, and these scientists had already been investigating the operational potentialities that it might afford. It was recognized that the operational use of radar was tied to its technical limitations, and it was hoped that the forces could benefit through application of the scientific training of these men not only in the technical problems arising from the new equipment, but also in the problem of ascertaining the best way to use it.

While radar afforded the initiating reason for the group, the breadth of interests of the members was such that they soon extended their work to other operations. One of the earliest problems with which they were concerned involved a calculation of that loss rate which the RAF could sustain without suffering eventual exhaustion in the early stages of the Battle of Britain.

In the next three years similar scientific groups were established in other British Forces, and in the Canadian and U.S. Forces as well. In the hard testing ground of war these groups carved for themselves a niche which they occupied with profit. Because they investigated operational uses of equipment rather than its technical development the groups were designated as operational research groups to distinguish them from those pursuing conventional technical research. From these groups emerged the body of work which is known by a variety of names, which include operational research, operations analysis, operations evaluation, systems evaluation, et cetera. (The name operational research, which is the one favoured in Canada, will be employed throughout this article.) There was a time when it was the common practice of operational research workers, when asked the inevitable

question, "What is operational research?", to answer, "Ask the heads of any five operational research sections and then choose whichever of the five different answers you like best." The question is still encountered regularly, but with the development and expansion of operational research in recent years, there is a greater measure of agreement among workers as to its nature. It is not easy to define—but then neither is science—and to be practical we shall consider examples of operational research before proceeding to a formal definition. This will be the purpose of the first part of this article; the second part will attempt to show the applicability of operational research to fields other than the military ones to which it was first formally applied, specifically to industrial and business fields.

One of the reasons why the adjective "operational" in operational research has frequently been changed to "operations" is that operational research as it has developed is in large part research on operations. Few will claim that operational research is in all respects a new science; its claim to originality and independent existence lies in the two facts: first, although it utilizes what are the fundamental discoveries of other fields, it does so by making new applications; second, it subsumes other less extensive fields into a connected domain. Despite these (legitimate) claims much operational research will appear to lead to conclusions which are self-evident and still more can be lumped under the undefinable expression common-sense. Accepting this, however, I hope to show that operations research can extend the application of common sense beyond the point where the most astute man will find his answers self-evident. If in recounting some of the examples, the reader may be tempted to smile inwardly and think that the problem only arose because of obtuseness on somebody's part, he must be reminded that the problem actually did arise in the presence of many men of common sense and proved administrative or executive ability, but that it was solved by an operational research section.

A Basic Example

As an initial example of operational research we shall take a hypothetical elementary and non-military case. We may suppose that a home owner wishes to do some household carpentry, say build some kitchen cupboards. We will further assume that he possesses a few simple tools such as a hand saw, a screw driver, and a hammer. We will also assume that like all home carpenters he wishes to do as nice a job as he can with a minimum of cost and of labour. Unfortunately, these two factors—cost and labour—cannot in general be minimized at the same time. If he bought an elaborate set of power tools labour could be minimized but not cost. On the other hand, with almost infinite pains the carpenter could make his cases without buying any additional tools, but he would have to spend probably far more time than he wished on

the job. Even so, cost in the long run might not be minimized. The use of nails might give him a job that would not stand up to the treatment required, while the use of screws without pre-drilled screw holes might split so many pieces of wood that the cost would be appreciably increased. In such a case the purchase of a drill would be an economy. The same might be said for the purchase of a chisel. Again the acquisition of these or other tools might not be justified by the job at hand, but would be desired for future commitments. Similar problems have been faced by most householders, and although they have never been solved by formal operational research, they can serve as an illustration of operational research approaches.

An operational analysis can serve to find the optimum method of going about the job. Ideally one would desire all the relevant information in precise form, although a surprising amount can be done with incomplete data. The data here would consist of such facts as: (1) the cost of all the tools involved, (2) the costs of all the materials involved, (3) the time required to perform any individual operation—e.g. sawing a board, and (4) the value which the man desires to set upon his labour.

With the figures above one might readily calculate the cheapest way to construct the desired articles. By setting a value on labour it becomes possible to determine an optimum solution for the cheapest way to construct the desired articles—one in which labour and equipment outlay appear in proper proportion. The solution to this problem might be called an example of extremely simple operational research. It might yield an answer that to do the particular job concerned one should buy only a chisel and nothing more, but that one should buy the wood already cut to size. However, in a full-fledged operational analysis a family of solutions would be obtained which might include such contingent solutions as one which would state that if there were greater than a 25% chance that the builder would soon undertake another carpentry job of equal magnitude the cheapest combined solution would be to buy a hand power tool with a saw and routing attachment and to do the job at home from lumber not cut to size. Another solution might state that if the chances of any further similar jobs were less than 10%, the cheapest procedure would be to buy the pieces ready made from a carpenter. In fact complete operational research analysis would yield the optimum procedure for all contingencies which one desired to investigate, limited, of course, to those cases that would be foreseen.

While such a homespun example may seem trivial, it has illustrative value by virtue of its simplicity. In the course of investigation, the operational research worker first defines his problem; namely, to provide some household equipment. He then investigates the possible procedures in order to determine what are the pertinent facts, and ob-

tains the necessary relevant data. He then combines such figures as the cost of a power saw and the time saved by its use into a set of equations which constitute a mathematical model of the system. (In an example as simple as the one here, it is unnecessary to set up the equations to solve the problem, but this is not the general case.) Once the model is obtained the investigator can then put to it such questions as what further value must be anticipated for any tool before its purchase can be justified. The answers to these will constitute a general solution to the problem.

Qualifications of the Analyst

We may note that the operational research worker must be fully conversant with the subject which he is investigating; if he is not his model may not relate to the realities of the problem. In this case he must know his carpentry, but in other cases he may have to know his acoustics or electronics. For this reason operational research demands of its workers a broad scientific background in addition to sufficient mathematics for more direct application.

We should also note that the general operational research solution quoted above constitutes a family and thus a decision must be made as to the member to be employed. If all relevant facts were known and contained within the mathematical model, the answer would be unique and emerge in such a form that it would be unchallengeable. However, this is almost never the case. Many of the factors may be unmeasurable or unmeasured and hence not included in the model. In such cases judgement must be employed to choose the best solution, and this is best exercised by the person responsible for the system of operations, i.e. the executive. It is felt that the executive should not be the analyst as in general the executive will neither possess the required scientific skills nor be capable of assuming the required impersonal attitude. Neither should the analyst, in general, be the executive. The analyst may well lack the desirable executive skills, but more than this when he is responsible for an operation it becomes less easy to make an impersonal analysis. In the example above, that possible solution which states it is cheapest to purchase the articles ready made is the type of solution which is often missed by one too close to the system, even if we discount emotional involvement which also is frequently involved.

Military Operational Research

In the example the analyst was faced with an essentially undeveloped situation; i.e., the system of operations was open to complete variation. This is not customarily the case; one usually encounters a developed series of operations and is asked to improve upon a part of the system. Considerable confusion has resulted in the past through attempts to give an omnibus definition in the case of military operational research, and

to give overall illustrative examples. Much of this may be avoided by the preliminary statement that military operational research problems are of four main types, and by the restricted use of examples to one type at a time. The four types are:

1. Weapons evaluation — i.e. assessments of the value which may accrue from the use of a particular weapon. This includes comparison of weapons as well.
2. Investigations aimed at finding the best tactics for available weapons, or the best weapons for possible tactics.
3. Predictions of the course of future operations either on the tactical or strategic level.
4. Analyses of the efficiency of organizations or methods.

All of these are the concern of military operational research no one more than the others.

Our first, somewhat simplified, military example comes from the Royal Air Force Coastal Command. Aircraft were dispatched to look for submarines which, when sighted, were attacked by the dropping of depth charges. These depth charges exploded at a pre-set depth and if the submarine were within lethal radius the explosion crushed its pressure hull and thus destroyed the submarine. The early depth charges were set to explode at a depth of 150 feet, which had been found by experience to be best for ship dropping. The aircraft attacks, however, turned out to be most ineffective. This might have been remedied if experiments had been carried out in which the depth of explosion was varied in attack until the best depth was found by experience. But, before the best depth could have been found, a very large number of ineffective attacks would have had to be carried out. An operational research analysis, however, led to the solution with no further loss of potential. Relevant factors were: (1) the distribution in depth of the submarines at the time of air attack — i.e. what fraction was on the surface, what fraction between 25 and 75 feet, what fraction between 75 and 125 feet, and so forth; (2) the probabilities of success for an air attack against a submarine at x feet carried out with a depth charge set to explode at y feet, for all relevant values of x and y. All these data were available from records. The first fact brought out by analysis was that in half the attacks the submarine was still visible at the time of attack, and in these cases charges exploding at 150 feet would not be effective. Common sense showed that depth charges should be set to explode closer to the surface, and operational research showed what was the optimum depth setting. As a consequence of this analysis, the depth charge settings were changed and air attacks soon became so formidable that submarines were forced to take evasive measures which so reduced their effectiveness that the course of the war was significantly affected.

A frequent method of operational research attack on new problems consists of attempts to find a significant quantity, compounded of two or more others, which remains comparatively constant throughout a large number of occurrences although the component quantities may vary considerably. When such a semi-invariant quantity is found one can frequently deduce from it the most favourable values for the components. An example of this approach may be taken from the anti-submarine warfare in the North Atlantic. In order to reduce the depredations of submarines the convoy system was adopted in World War I, and has been credited with the comparative neutralization of the U-boats in that conflict. It was continued in World War II, where it was submitted to operational research. U-boat attacks in 1941-2 on convoys were analysed and revealed the number of merchant vessels sunk per engagement between a convoy and a U-boat pack to be more or less independent of the size of the convoy. This led to the deduction that the system would be most effective if the Admiralty would increase the size of convoys to the maximum feasible size for which this ratio remained constant. This was done. It further emerged from the analysis that on the average the number of vessels sunk per attack decreased roughly in proportion to the number of escort vessels provided. While the principle "the more escort ships, the better the defence" is almost a self-evident one, additional information of value lies in the discovery that the relation is one of direct proportion. From this relation the staff is able to weigh the value gained per additional escort against the expected loss if the escort is not provided. For long range planning such information is invaluable.

Employment of a Limited Force

The best way to employ a limited force was a frequent question asked of wartime operational research sections. For example, given a fixed number of aircraft the question arose as to whether they would be better employed in the protection of shipping if they bombed the submarine pens or if they were used to escort convoys at sea. A comparison of relative effectiveness per flying hour on each of the tasks showed that convoy escort was the more fruitful employment. This was the answer under the circumstances which then held. A possible answer under other conditions could well have been to bomb the pens or to split the forces available 50-50 or any other division. In a thorough analysis the change points at which different tactics become optimum are also shown to the advantage of the staff.

The Methods of Research

For the examples which we have discussed, methods are virtually self-evident. In most other cases the methods of solution are not so elementary. Most elementary calculus courses have as a text problem one

in which a customs cutter is supposed to spot a smuggler's ship but is circumvented by fog before being able to close directly. (These texts were written before the days of radar.) The student is then asked, given the speed of the two ships and the assumption that the smuggler changes course only once and at the instant that he is sighted by the cutter, what courses should the cutter steer in order to be certain to intercept the smuggler. The answer is that if the cutter steers along a logarithmic spiral it cannot fail to intercept the smuggler, despite the fact that the smuggler's course is unknown. While the problem in its traditional form is obsolete, very much the same problem obtains for a destroyer chasing a submarine whose position was once known but which has since submerged. The solution is one of elementary differential calculus. However, the problem acquires an additional degree of complexity if we go on to consider that the original position of the submarine was known to a degree of probability rather than with certainty. When we further consider that the submarine might be at position A with say 30% certainty and position B with 70% we have a problem which can tax the powers of an expert mathematician. The example relates to sea warfare, but it is evident that it illustrates a method applicable to all forms of search and pursuit.

Another important military application of operational research has been to compare the effectiveness of two different weapons. This can be extremely easy or extremely difficult, depending upon the problem. For example, given two coast artillery guns in fixed emplacements with unlimited ammunition, it is clear that of two guns otherwise identical, the one which fires more quickly will be overall the more effective. In a mobile weapon this will still probably be true although not necessarily, for it may never be profitable to use the greater speed of fire, because the limiting factor may be the supply of ammunition. If the faster gun is heavier and less mobile, or if it is more complex and more difficult to maintain in the field, the problem becomes more difficult. And when it comes down to deciding between two rifles, we all know that experts may be unable to agree. One might ask that if operational research gives a "scientific" answer how can this answer admit of argument. It cannot, but disagreement may lie in the relative values placed on the factors during the investigation. This point deserves emphasis because it highlights the earlier statement that the operational research worker must be fully familiar with the problem under investigation so that the mathematical model set up will agree with the real situation. The disagreement mentioned above is as to the relevance of the model rather than as to the method of solution.

A final military example of operational research may prove of value. It is frequently desirable to analyse an entire military operation in complete detail so as to ascertain where improvement is most required, and where local improvement would not affect the overall situation. Let us

assume that before the days of radar or air artillery spotting one desired to improve the performance of coast artillery. Now we suppose the situation to be that the gun in service can fire to the visible horizon, but technical experts tell us that research could probably give us a gun with double this range. Would such an improvement be worth the effort to develop it? It is obvious that this improvement in range alone is of no value unless some concomitant improvement enables one to see beyond the horizon. We therefore conclude that no overall gain will be achieved by improving range alone. While this answer is self-evident, such an obvious answer becomes less obvious in less exaggerated situations and it becomes the task of operational research to unearth the solution. It should be noted that logic is the principal operational research tool here.

Continuing with the example above we see that a gun fired by visual information alone is limited by night and bad visibility conditions. A major improvement would result if the method of sighting were made more universal. Certainly such an investigation would not invent radar but it would show the operational value of something with information-gathering powers similar to those of radar. After such an investigation the scientists would be alerted to look for something with these properties, and hence far more likely to appreciate the value in application of what might otherwise be purely laboratory developments. This is not the least value of operational research; namely, the ability of the operational research worker to recognize applications for scientific and technical discoveries.

The tools of the operational research worker are mainly mathematical. Statistics are very helpful in creating the mathematical model, but operational research is not purely or even principally statistics. Similarly, probability theory is also frequently employed. More frequently, however, the branch of mathematics used is simple arithmetic. Skill in an operational research worker is not purely mathematical skill. It lies principally in his ability to recognize a problem and to formulate it. When once formulated, the problem may often be solved by the simplest logic. Even in complex problems, the ability to solve the problem in detail once it has been set up is more common than that of recognition, and hence less valuable.

Applicability to Business

The discussion so far has dealt principally with military operational research, yet the reader should recognize that most of the general statements are to a degree applicable to business situations as well. He may think that operational research as exemplified above can offer nothing new that has not already been applied to businesses in general or to his business in particular. And with this thought many experienced operational research workers will be in considerable agreement. There is no

question that the work of time and motion study experts, industrial engineers, quality control engineers, and so-called efficiency experts has included investigations that can be classed as operational research.

Before we go on to consider possible industrial applications for operational research it may be profitable to attempt a definition. To quote one authority (Morse & Kimball, *Methods of Operations Research,* Wiley, 1950): "Operations research is a scientific method of providing executive departments with a quantitative basis for decisions under their control." This may, however, be too general, so let us offer another; namely, operational research is that branch of applied science which studies the metrical (i.e. measurable) and denumerable aspects of systems of operations with the view of determining the behaviour of the system under all conditions in order that the system itself may be improved. To mathematicians this may be more concisely put by saying that operational research consists of the application of the methods of the calculus of variations to the analysis of systems in general. The above definitions are all different, but they are not inconsistent. It can also be seen that although the definers have themselves worked essentially in military operational research, none has so defined operational research with this restriction. It is clear that all believe that it has civil application.

The novelty for industrial application of operational research lies in the fact that as a field of investigation it encompasses many less extensive fields which have already proven to be of value. But the operational research worker can go a bit further; he is not restricted to, say, time and motion study or to a statistical investigation of accounts, or to any one section of the system of operations which is involved in production and distribution. He should be equipped to work at any or all points in the system and to improve it accordingly. Aided by taking the broader approach he should determine what parts of the system can benefit most from improvement, and what parts do not require research. Examples of this are the case of the coastal gun cited above, or the statement that it would be of little value to enlarge the interior of a store if the doors constituted a bottleneck so that more customers could not enter.

Industrial Operational Research

The best way to show the nature and value of operational research is to give examples. Whereas industrial examples can readily be found, in most cases those who found the solution would probably deny all knowledge of operational research. This, however, is not paradoxical, for, as has been said above, what we now may call operational research has a long industrial history although not as an ordered or well developed discipline. In the past those problems amenable to operational research have more frequently been solved either by trial and error or by the shrewd judgment of the businessman or industrialist. In the final analysis

all decisions will depend upon the judgment of the businessman or industrialist, but operational research by the preparation of a mathematical model can greatly assist the executive in coming to his decision. As for trial and error solutions, these of course can be quite satisfactory, but they generally require a considerable time to reach, and the process of reaching the optimum may be lengthy and costly. Here operational research can come to the rescue, not necessarily by eliminating the repetitive trials, but by appreciably cutting down the number required with obvious consequent saving.

Certain well established fields that can be included with operational research should be cited if only to point out the extent to which it is already established in industry. Communications theory is a clear case, as is that of quality control. By this I do not mean that the present workers in each field should be called operational research workers, nor am I trying to steal any of their thunder. I do mean, however, that if the fields had not already been established it would have been the task of a good operational research worker to show their merit, and to participate in their development. Another such field is that of motion study. Here the operational research worker would not only have pointed out the merit of the field, but would himself continually have applied its methods. Other examples lie in the work of the various established agencies which try to find out, for example, exactly how a housewife uses a kettle so that the handle can be best placed. This example, which few would call operational research, is the civil analogue of investigations made in the field in order to ascertain the best place to put an attachment on a gun. This latter is a common type problem in army operational research groups.

Problems dealing with flow of traffic also have a long industrial history, and are also of the type which an operational research group should attack. Here I do not mean to say that an operational research group can study the traffic problems themselves better than can traffic engineers, but because of their broader interests they will be in a better position to extend the same methods to other and similar problems. And by similar I do not necessarily mean problems that are physically similar, but ones which although they may differ greatly in a superficial way are mathematically similar. To illustrate this point the mathematics of battle exchanges bears a remarkable resemblance to that used in some branches of physical chemistry. As another example, some of the equations developed in statistical astronomy to analyse the motions of star clusters can be well applied in the evaluation of artillery.

Industrial operational research can be done (and in some cases is presently being done) on such problems as determinations of the best location and number of branch warehouses, the optimum sizes for single plants, and the optimum location for plants and distributing outlets.

These studies can show and have shown their value in dollars and cents. Other studies can help an executive to decide what the normal means of communication should be within an industry. Many an executive has shifted from mail or telegraph to teletype or telephone or vice versa with a consequent saving. Operational research should be able to tell him in advance whether or not to make a shift, what shift if any to make, and if a shift is made what gains to expect. It can also indicate what routine communication method should be used for a particular type of communication.

Forms and records are closely associated with operational research. Much of the information needed to solve a problem is obtained through written records, and operational research workers soon learn to design forms which call for the pertinent information, which are easy to fill out, and which do not request unnecessary information. This last is important. Most forms evolve and the original purpose for some entries is frequently lost sight of. Long after the reason for any single entry may have disappeared, that entry may still be gathered at considerable cost. It is not uncommon to find that only a small fraction of entries is actually used, but useless entries have been included because somebody thought it was nice to include them and that some day the information might prove helpful. I shall not go on, but merely want to point out that this is a field where operational research has proven itself among the military, and here it should find similar work in civil dress.

Operational Research for Small Businesses

It is more likely that large businesses and industries may feel that they could profitably either establish an operational research group or consult one of the larger consultant firms; it is probably less likely that small business men and industrialists will feel that they too could benefit. Yet this latter attitude is not fully justified. The experience of the consultant firms is that small businesses have problems that are equally amenable to operational research methods. An oft-cited example is the optimum distribution between tables and counter seats which should be used in a particular restaurant. Of course this will differ according to the restaurant and the clientele, but after these have been established the rest is quite simple. Another problem is that of the number of employees of a particular category — such as cashiers and salesladies — needed to give the best results on the balance sheet. Still another problem is the best layout to be employed in the store or small factory. An optimum solution for these may well mean the difference between success and failure, or small profits and large ones. True, they can be solved in some cases by extended trial and error, but small businesses are precisely the places which cannot afford extended unprofitable trials. Neither can small businesses afford operational research sections for themselves, as large businesses can, but they can benefit through the establishment of opera-

tional research groups by business and manufacturing organizations, or through the use of consultant firms. Both possibilities have been exploited to a limited extent, but an expansion could prove desirable.

One might ask what an operational research worker would do if he were asked to investigate a business of which he had no previous knowledge or experience. To answer this the question must first be asked whether or not the operational research worker is tied to a particular problem or given more of a free hand. The latter case is the more interesting and is the one we will discuss. First the investigator should try to familiarize himself with the entire sequence of operations involved in the business. He should then ask precisely what is involved in each operation, what are the raw data which enter each operation and what are the refined data that leave it. What precisely and in detail does each operation accomplish, and does it perform this in the most efficient way? Next the question arises as to how each operation fits into the series of operations involved. Investigations must be made to find out what various operations perform in combination, and a logical examination made to see if the number of operations can be reduced with a concomitant gain. Finally after this preliminary investigation, the worker will set up his mathematical model should that prove practicable. It is not always necessary, however, to do so, and sometimes it may be impossible to set up a model for the entire system. In this latter case a model may be set up for part of the system. Such a practical model can still be of considerable value.

With the mathematical model, a process of variation can be started in which one varies the operations to see what will be the final effect on the end product. Frequently a calculus applied to the model itself can point out the optimum operations, and from this and other mathematical aids one can eventually arrive at an optimum sequence of operations for the conditions prevailing. Now the optimum conditions so deduced really apply to the model itself rather than to the real situation. Here is where judgment rather than measurement should enter, and where the executive should play his proper role. From the operational research report the executive can judge whether or not all the relevant conditions have been taken into account. If there are others which can be measured these may be included in a revised report, but the operational research results must be modified by judgment to take account of those factors which are not amenable to measurement. It is necessary to belabour this differentiation between the operational research worker and the executive to prevent misunderstanding. In the limited time of the study the operational research worker will not acquire the knowledge of the business that the executive will have, nor is it reasonable to expect this. Nevertheless with his greater experience in analysis and his objective scientific approach the operational research worker

can combine those factors which are apparent and which admit of ready measurement, and by showing the effects of these in combination can simplify the task of the executive.

One must recognize that many of the things which an operational research worker may wish to change will be based on earlier decisions of the executive. The operational research worker must be in a position to know why these decisions were made, and to show why the changes are necessary. Not to do this is not only a mark of bumptiousness, which will certainly be resented, but is also poor operational research. However, when a good study is made it should contain within itself much information which will be of value to the executive, as well as recommendations for improvements. I cannot help but feel that so many limited applications of operational research have been used by industry and business that a full dress application would rapidly justify itself.

In Canada the only operational research labelled as such is conducted by a group in the Defence Research Board which has branches operating throughout the various services. However, at least one major Canadian company is considering the establishment of its own operational research department. What the pattern of development will be remains to be seen. There are many persons in Canada doing operational research, albeit restricted, but without the label, while those who bear the label are essentially confined to the Department of National Defence. As an operational research worker myself, I believe that an extension of operational research is most desirable if Canadian industry is to realize its full potential, but the decision rests with industry (as it should) and not with the scientists.

Some Effects of Grade Labelling

Patricia K. Norsworthy*

Evaluations of quality in relation to price have become exceedingly important in view of recent debates concerning the reintroduction of price controls and of the current downswing in the cost of living index. Miss Norsworthy discusses some aspects of Canada's compulsory grade labelling program in order that consumers and the businessmen who serve them may realize the value of some degree of product standardization and grade marking.

IN recent months the introduction of price controls to alleviate the drain on the consumer's pocketbook seemed imminent. Debate concerning the propriety of such a move was vigorous, and the well-worn issue of *quality* maintenance allied with *price* maintenance reappeared. Now that the rise in prices has been somewhat arrested and the trend indeed in many cases reversed, the need for the intelligent assessment of quality in light of price still remains.

One of the major methods of indicating quality is grading. Canada, although not unique with respect to grading requirements, is indeed a pioneer in the field. Canadians realized early that dependable markets form the foundation of prosperity. Canada's relatively small population could not readily absorb the vast quantity of primary products from field, forest, sea, and mine, and its people sought buyers elsewhere. The distance of the market from the source of the goods forced the development of quality guarantees, and the nature of the products simplified this requirement. Soon Canada's grading system became well established, and its grade marks were recognized as dependable signs of quality.

Not only the foreign but also the domestic market has enjoyed efficient and economical guidance through grading requirements, and it is primarily in terms of the domestic market for foods that this discussion will continue. This area in itself is a wide one. The grade labelling of foods in Canada has been in force for a good many years. It came about

*Much of the material in this article is drawn from Miss Norsworthy's thesis, *An Appraisal of Mandatory Grade Labelling in Canada and Its Possible Application in the United States,* prepared at Boston University, Boston, Mass., in 1951. Jessie V. Coles' *Standards and Labels for Consumer Goods* (The Ronald Press Co., New York, 1949) has also been employed extensively as a reference.

more through an evolutionary process than by any sudden enactment. Various Acts of Parliament from 1884 on gradually laid down the specifications concerning identification of source, description of product, and information concerning weight and quality grade. The Department of Agriculture works in close coordination with the industry in administering these laws, and its regulations cover selected canned, dehydrated and frozen fruits and vegetables, fresh fruits and vegetables, eggs, poultry and some meat, butter and cheese, maple sugar and honey, etc. Inspection is performed by registered manufacturers themselves and checked by government inspectors. Persistent disagreement between processors and inspectors may be settled in court, but only a few cases concerning canned fruits and vegetables have had to be settled in this manner.

Thus Canada has built a system of standards which are mandatory for some products in all cases and for others in certain places and under certain conditions. The Dominion Government has assumed responsibility for these regulations and has enjoyed noticeable cooperation from the industries involved. Of course regulations arose first more to form a basis upon which producers might sell and distributors might buy than as an appeal to consumers. However, in the last few years, the significance of grade labelling in the latter capacity has been realized, and consumer education regarding the grading system has been furthered.

Definitions

Grade labelling has been defined as follows: "The practice of marking merchandise or the packages containing such merchandise with a designation such as A, B, or C, or 1st, 2nd, or 3rd, indicating that the article so marked falls within one of a series of quality classes defined by specifications or standards set up by government agencies, trade groups and/or consumer organizations and usually accepted by the interested parties with reference to the various properties and characteristics which have been agreed upon as elements essential to the proper appraisal of its desirability."[1]

ABC labelling, as it is usually called, designates grade labelling which makes relative ranks or positions of the goods clear to consumers, even though other names may be used. "Compulsory or mandatory grade labelling is that which is required by law and enforced by a government agency with either federal, state, or local jurisdiction."[2] Grades may be based on one property or may be multiple factor ratings. Of course, grading involves standardization. "Standardization involves the fixing or adoption of rules to guide in producing or sorting commodities into groups of uniform kind, size, or quality. The actual dividing or sorting

[1] *Printers' Ink,* Vol. 209, Nov. 3, 1944, p. 104. "Marketing Experts Agree on Labelling Definitions".

[2] "Controversy over Compulsory Grade Labelling"—Jesse V. Coles, *Standards and Labels for Consumer Goods,* New York, The Ronald Press Co., 1949.

in accordance with these rules is known as grading."[3] It is the standard which makes grading possible and gives it its permanence. There may also be a series of standards or simply one minimum. If ratings are used, a theoretical maximum is set, and qualities of goods are usually expressed as a percentage or fraction of this (e.g. 50% pure wool) on the basis of standards based on maximum quality. Standards for grading purposes must have built-in flexibility and must conform to the uses for which the graded product is purchased.

Grade Marking Terminology

If we assume for the moment that grading can be effectively utilized, we must develop simple meaningful terms to be used on product labels, in advertisements, etc. Grades should be indicated in a manner which is not technical, is easily understood, and informs the buyer automatically of the grading scale. It should not mislead consumers by piling up superlatives. Now, 123 or ABC markings better suggest quality distinction than the Fancy, Choice, and Standard labels used in Canada, but they suggest a simplicity and definiteness which do not exist. We must also consider the psychological effect of the use of grades B and lower. Lower grades would be harder to sell, and farmers, canners, and even ultimate consumers would be affected. This reaction might also induce misbranding. However, the consumer should be wise enough to see that only a certain part of the crop can become grade A, and that grade B might suit her purpose well. In conclusion, it should be remembered that no grade labelling terminology precludes informative labelling, standardized vocabulary, grade definitions, and other explanations which may help to clarify product classification.

The Practicability of Standardization and Grading

Of course it is a fallacy that all goods can be graded, but grading should be possible whenever agreement can be reached concerning what is high, medium or low quality. Practicability depends upon the characteristics of goods and their divisibility into a reasonable number of classes on some accurate basis, their different uses, variance from the established standards from place to place, time to time, etc., perishability, ability to be subjected to objective tests, "sample-ability", complexity of their individual characteristics, and flexibility of the standards which dictate their grades.

Manufactured goods, whose quality can be more easily controlled, present a simpler grading problem than products of vegetable and animal origin. The number and types of grades are, at any rate, determined by the complexity of the product. If, to satisfy those who oppose the establishment of a lengthy series of grades and to suit products which do not

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[3]Converse, P. D., *Marketing Methods and Policies*, New York, Prentice-Hall, Inc., 1924, p. 13.

vary significantly from one individual unit to another, we set up only a small number of grades, it is evident that a great amount of leeway will be found within those grade boundaries. Arbitrary grade lines may mean that the variation within a grade may be greater than that between two products of different grades which are close to the same grade line. Nevertheless, this leeway gives producers a chance to develop a demand for their particular brands. Individual products remain interesting because grading in basic factors has not stifled individualism. It is true that if a product is below quality score in one characteristic, it cannot be placed in a higher division even though its total score merits it, and those who consider that factor unimportant are misled. Similarly, a score placing a good within a given grade may represent a different combination of quality factors. However, the element of misrepresentation introduced is more than compensated by simplification of choice.

Secondly, the number and types of grades are determined by consumer demand and grades must be set up according to the percentage of the market which will absorb inferior goods, superior goods, etc., so that maximum sales may be reached. However, such division implies a similar division of the market. Multiple-factor grade marks further complicate this problem. Still, the grading of individual qualities can help studious shoppers and a more general classification would help even more, for though we grant that general "quality" does not exist, the serviceability-in-use of many everyday products which cater to a fairly standardized taste can well be classified in order to save time and effort on the part of the shopper.

Another problem is that of lack of uniformity in products from place to place and season to season. The same problem exists with brands, and different ways to meet it have been attempted. Varieties may be specified in setting up standards, grades may be wide enough to include all varieties, or separate standards may be established for products from different places. Time variations present several problems. Products vary according to the stage of maturity at which they are picked. Secondly, yearly changes mean that producers cannot market the same amounts of each grade from season to season, but grades have been established so that some meet minimum standards of each grade in poor seasons. To overcome these difficulties agricultural organizations and government agencies have done all they can to standardize products — distribute seed, supply information, irrigate, etc. Of course, the grading system cannot prevent a serious shortage of products of one grade, but at least the consumer is informed regarding the qualities he *is* able to procure. Perishability of products also affects the practicability of grading. This problem has been solved in three ways. Goods may be roughly graded at the place of production and later carefully regraded at the consumer level. Time specifications for eggs, fresh fruits, and

vegetables assure rapid marketing, and refrigeration has also aided quality maintenance.

It is usually unsatisfactory to attempt to grade goods or individual factors of goods unless these may be submitted to objective tests in which a practical procedure for identifying or measuring individual characteristics is followed. Recently, an additional number of scientific test methods has been developed, and testing has, consequently, grown more dependable. Of course, instruments used are often complicated, technical, and expensive, but their use is becoming more widespread, and their effectiveness has been proved. Mechanical devices cannot be used, however, to measure uniformity of size, colour, shape, freedom from blemish, etc., and a subjective comparison with a real or mental standard must be made. Thus accuracy depends on the training and judgment of graders. On the other hand, it might be wise to compare this risk with the fact that in wholesaling, growers, distributors, and buyers of produce risk thousands of dollars on subjective grades. Very few appeals regarding official gradings have been granted. Thus consistency must have been shown by inspectors.

There are two schools of thought concerning the process of evaluation of product characteristics, which are subjectively measured. Some say that flavour, for example, is a function of objectively measurable qualities, and that it remains more or less constant if they do. In Canada this assumption is considered valid. Those belonging to the second school realize that judgment of flavour, etc., varies from user to user and grader to grader, and cannot be used as a basis for grading. They say that grades including subjective measurements are inaccurate, inconstant, and unenforceable. However, grades which do not include subjectively measured qualities are misleading. Now, it is true that taste varies with food habits, race, training, state of health, background, surrounding conditions, etc., but it is only *one* factor contributing to all-round quality, and grading *can* still be useful without it. If disagreement regarding the measurement of a few qualities continues, the standardization and appropriate classification of all other qualities will be ignored. However, advocates of the grading of subjective qualities *should* temper their arguments to *some* degree, for the grading of products such as cigarettes and perfume, which depend largely for their sales upon individual tastes and product differentiation, cannot, of course, be standardized. Similarly, style merchandise is difficult to classify, although the labelling of many such products with regard to other characteristics, including materials, construction, etc., may be desirable.

It is argued that mandatory standards are not easily changed, for governments are very slow-moving bodies. However, the government has merely helped industry to establish standards and will permit changes as the latter seeks adjustments in accord with dynamic consumer de-

mands. It seems axiomatic that men can always change that upon which they primarily agree, and Canada's provisions have been amended from time to time to meet current conditions.

Attitudes of and Benefits to Consumers

Success of grade labelling in the industrial field does not necessarily point to success at the consumer level, for the number and variety of people to be pleased in the latter case presents a striking contrast to that in the former. An educational system teaching consumers not only to want good things, but also to choose them intelligently, must be maintained. Surely it is easier to eliminate consumer confusion regarding a simple grading system than to continue to hope that buyers might grow to understand the complexities of brand marketing. The Canadian Association of Consumers, the CDA, government boards, women's groups, universities, retailers, trade associations, manufacturers and publications have taken an active part in this program. The consumer reaps many benefits from the grading program, which provides intelligent price comparisons in light of quantity and quality, quality suited to need, aid in purchasing goods in closed packages, protection to health, tests for truthful advertising, and a narrower and simpler choice among the numerous and varying brands which today exceed the needs of consumers. Grading helps the consumer buy by specification, cuts returns, saves time, eliminates lengthy decisions regarding quality so he can choose regarding style, etc., and facilitates telephone and mail order buying and self service.

Attitudes of and Benefits to Producers and Middlemen

A mandatory grading system would provide similar benefits to all types of businessmen, for grading rewards competent, reliable businessmen and protects them against the quality adulteration of unethical competitors, gives small business a chance (and all business originates with the small firm), and builds a foundation for fairer competition within grade classifications, reducing discouraging losses, litigation, etc., caused by unfair practices. It eliminates consumer skepticism and mistrust of goods, lessens consumer complaints, and increases consumer satisfaction in goods of all grades, thus increasing turnover (especially of staples), average and total sales, and profits. Grading helps to increase the standard of living of the consumer and hence the success of business, since the fortunes of the buyers and sellers are interdependent.

Grades are yardsticks for classifying product characteristics and performance, which nevertheless leave latitude for variation and initiative. They form a basis for promotion of products, backed up by brand names and reputations, make assumption of responsibility for product quality more plausible, simplify assortments and reduce inventory investments, and emphasize quality merchandise which carries prestige and high pro-

fits. Production and sales techniques also may be improved through the use of grades. They increase the efficiency of buying and handling goods. Grading requirements tighten and improve inspection regulations, thereby encouraging satisfactory production. They buoy up the laggards, increasing the efficiency of the manufacturing process in exchange for an added premium or price jump. Quality labelling makes advertising more effective and helps it command greater public confidence, builds more successful salesmen, helps to impress upon personnel the advantages of given products, and supplants the necessity of selling by sample — an inconvenience and extra cost. In addition, it simplifies distant transactions, makes mass selling possible, saves time necessary to guide purchases and explain labels, standardizes the language of transactions, decreases customer returns and lessens markdowns.

Some producers oppose — actively or passively — or at least show little interest in grading at the consumer level, although they employ it among themselves. Some are simply satisfied with the status quo or fear regimentation, red tape, and bureaucracy. Others feel no responsibility to the consumers, think the consumers need no aid, or believe that grading harms consumer choice and contributes to unemployment and falling purchasing power. A few are too busy producing to contemplate distribution problems and perhaps feel that grading only complicates distribution and perhaps decreases total sales. Those who sell inferior goods oppose the grading movement. Large advertisers *may* fear grading's effect on branding and the threat of small business, but Canadian advertisers have not been able to build up as effective quasi-monopolies and price differentials through product differentiation as have their American counterparts. Most producers, on the other hand, are proponents of grading, especially smaller canners, etc., producing unfamiliar brands.

Distributors are generally more interested in grading than producers. Any opposition on the part of wholesalers is not as strong as that of producers. Retailers who oppose grading include dishonest merchants, and small merchants dependent on national brands who get a higher margin because of service and convenience factors for quality which is offered by larger stores at a reduced price. Large scale merchandisers, who have private brands, are avid supporters of product standardization. Grading is generally favoured by all types of Canadian retailers, who supply information not so much because of the fear of prosecution as because of the realization that grading is a reasonable policy. The few dishonest retailers have been brought into line by sheer persuasion and the fact that bad publicity might affect them.

As long as the consumers need aid in becoming more effective buyers, producers' and distributors' attitudes will have to be directed so that they favour educational movements, for their success hinges upon their customer's knowledge and purchases.

Effect on Brands and Advertising

Brands and trademarks, which, along with goodwill have cost millions of dollars to build up, are the private property of producers and are entitled to protection. Business has encouraged individual effort to make things better through competition by product differentiation, and the government has protected manufacturers' rights to brands.

Brands and grades both guide purchases, but brands also guarantee service and satisfaction beyond quality, as well as quality in many cases. Thus product differentiation can continue by varying flavour, style, package, etc. Brand choice exists within grade classifications and may cause price differentials within grade boundaries to the extent that consumers either lack information concerning quality ratings or wish to discount graded quality in favour of non-graded factors which provide extra satisfaction. It is also self-evident that the best foods are made by established advertisers who have their names at stake. Thus their brands are not wiped out by grading.

In fact, brands may well increase with grading requirements. New brands and private brands are given a better start and better support with quality markings, and some Canadian canners have introduced new brands for each product grade produced. Grading will also tend to improve the standing of existing brands. It carries on from the point at which brand labelling stops and assures the brand purchaser that the product meets or exceeds standard specifications, thus providing a concrete selling point and fortifying the brand name. Of course, each cannot count upon grading as a definite guarantee of its permanence.

Advertising does not necessarily decrease. In a fair, unfixed horserace, horses do not always tie, and as long as there are brands, advertising will exist to claim superiority within grades and even across grade boundaries. In spite of grading there are many other appeals left; consumer education will supply additional copy; and advertising has even been used to point out the dangers of grade labelling! Grading should further truthful and rational advertising and eliminate exaggerated claims, thus increasing consumer goodwill and establishing sounder advertising ethics. In Canada stress is still placed on brand names, although quality trade marks have assumed greater significance than formerly. Space taken by canning advertisers in Canadian publications has certainly not decreased, for an accurate identification by grade is not incompatible with a colourful description of qualities incapable of standardization.

Effect on Prices

It is improbable that grading would ever cause a standardization of prices within quality groups. Of course, the price differential will be reduced to the extent that consumers are grade conscious and discern

no difference in ungraded qualities, and naturally, a price spread between products of *different* grades will probably exist because of quality differences, with the exception of upsets caused by consumer ignorance or preference for non-graded characteristics.

A general increase in price may occur in three cases. Cost of grading may be added to the price of goods. In Canada, the negligible expense of the relatively few inspectors needed is charged to government expenditures, and the only expense borne by producers is for samples, which do not cause a rise in the price of their products. Some brands and products can claim an increased price, for they gain prestige when their superior quality is known. This is only fair, and is balanced by a decrease in the price of poorer quality goods. An increase may also occur if demand concentrates on one grade, but the law of supply and demand will eventually force prices to "normal".

Prices will remain constant for goods which stay in the same relative position.

A general decrease in price occurs, in the first place, if an increase in price competition is stimulated by the fact that quality is known. This would lead to price cutting, etc., and a sacrifice of margins. Secondly, a welcome cut occurs in the price of goods which have formerly claimed a higher quality than has actually been the case. Finally, it is possible that grading may lower costs to the consumer through reduced wastes in production and distribution.

It seems more plausible that the latter two conditions, involving constant or decreased prices, prevail, and under this assumption, with constant or increasing quality, real income is not threatened and probably is increased, and consumers enjoy an improved standard of living.

Effect on Quality

Before official standards for quality and quantity were set up, many examples of varying quantity and quality could be found. Little relationship between quantity and quality and price existed and brands and labels were not always dependable guides.

Grade labelling seemed to be the answer to quality differences, although some felt that lower grade quality would be given a "bad mark" and that its consumption would decrease. In Canada this was the consumers' first reaction, but this was tempered by the purchasing power of the buyers. With consumer education, different qualities for different needs were bought by all.

Quality seems to have been fairly reported. Nevertheless, some may feel that it has been lowered to minimum specifications and that merchandise may be measured by how cheap it is rather than how satisfactory, how serviceable, how good, how conducive to pride in ownership, etc. Such a deterioration in quality has not been experienced in

Canada. Packers get what they want out of the pack, and do not appear to cut quality, from which sizeable premiums or even a jump in grade may result. A degeneration of quality should follow only if standardization within grades is assumed.

Some claim that no quality improvements have resulted because inventors can work only with grade A merchandise, and it would be hard to incorporate improvements within lower grades in light of competition, since producers may pack to a price basis. This, however, has not been the case.

Finally, grading may provide an incentive to improve quality. Protection against adulteration is ensured. A minimum standard still permits variation of quality within each grade for an added premium. Thirdly, competition is placed upon the basis of actual quality, which will thus be raised.

However, less incentive to improve will exist when products receive an A rating, and quality standards should be reviewed often. As quality improves with technological change or if dissatisfaction develops, standards must be adjusted. Changes should not be made too often or stability is sacrificed, and grading laws should be general in nature, giving a given agency the authority to stipulate current specifications for grades.

In general, it seems clear that quality marks induce honest quality labelling and a concentrated effort to improve goods.

Ease of Enforcement

When a government requires grading, it also assumes the responsibility of policing the system and guaranteeing the validity of the grades. It has been suggested that this be done by placing inspectors in individual plants to continually check product quality, as in the U.S. under its voluntary system, but questions have been raised re how justly and how efficiently such inspectors could function and how effectively the law would regulate the activities of producers. The Canadian system proves that such problems are not void of solution.

Administration of the grading system is the responsibility of the Dominion Department of Agriculture and is outlined under the appropriate acts. Individual canners are responsible for the accurate grading and labelling of their own packs and the spirit of mutual confidence and cooperation in which the Canadian canners and the Dominion Government approach regulation problems is commendable.

Processors apply for a certificate of registration, which is given after inspection, and the Minister of Agriculture issues a numbered permit which must appear on each package marketed by the producer. Labels must be approved before use. All articles coming under the jurisdiction of the Acts are subject to inspection during the whole pro-

cess of preparation, packing, and shipment. Sample grades are tested, and if there is any question regarding the accuracy of the label, goods are marked "Held" until a recheck is made in Ottawa. If markings are found to be incorrect, products must be relabelled, and few disagreements have resulted. If regulations are not complied with, the Minister may withdraw the inspector, refuse certification, or close the factory. Articles not conforming to the requirements are forfeited to the Crown.

The success with which this system functions proves that enforceability is not an insurmountable obstacle.

Correlation With Democratic Economic Philosophy

Mandatory grading is not incompatible with our economic philosophy. Some may claim that it builds a bureaucracy and increases taxes, but forget that one of the *biggest* wastes in our economic system is consumer indecision. They say that grading would make the government even more unwieldy and inefficient, but it has merely assumed responsibility for this program, letting the industry, with the assistance of government agencies, carry it out. Secondly, they point to the regimentation of the people and say that standards stifle incentive, lead to stagnation, and have a *de*grading effect. Finally, businessmen want to *improve* the present economic pattern, but do not foster changes from which regulation of production and consumption might ultimately result.

However, freedom of enterprise implies freedom for each individual to employ himself and his property in any line of production he cares to enter, but it is limited by economic conditions, the rights of other individuals, the prohibition of acts injurious to the public, etc. It is accompanied by freedom of competition, in which prices are determined by the free interplay of buyers and sellers in the market. Now the elimination of fraud, adulteration, and doubletalk as an aid to honest merchandising is the duty of the governing body. Similarly, a freely functioning market depends upon free consumer choice and persuasion, which is more effective if buyers are well informed. Grade labelling can assure the maintenance of these conditions. These, in turn, form the foundation upon which our high standard of living is based.

Reasons for Divergent Canadian and American Policies

Compulsory grade labelling is a field in which Canadian policy is notably at variance with that of the United States. It has been actively opposed in the United States for many years — especially during NRA days and in discussions concerning the Food and Drug Bill and OPA regulations during World War II. Although it has its drawbacks, it has functioned very satisfactorily in Canada. However, conditions which differentiate the two American neighbours are sufficient to merit this divergency of opinion.

The Canadian economy itself provides a different environment in which grade labelling may function. Over two-thirds of Canada's national income depends upon her production of primary goods, which are chiefly staples and usually standardized, and Canadian quality markings have had to uphold their fine reputation in the export market, for the latter is indeed important to Canadian business and hence to the Canadian consumer. Standardization has long been a by-word in the market and was quickly accepted at the consumer level. Also each type of product is grown in fewer regions than in the United States, and perhaps fewer varieties need to be accounted for in drawing up standards, which are therefore less confusing.

Producers are smaller, and they do not advertise as extensively as American firms because of smaller budgets and lack of appropriate media. They are also less numerous, and it is not only easier, therefore, to reach agreement and gain cooperation, but also less difficult to arrange inspection.

Thirdly, the population is smaller and, although more scattered, more easily and quickly educated. More chance is afforded for consumers to maintain a direct contact with primary or intermediate sources of supply, and thus accumulate helpful purchasing knowledge. They may also feel closer to government officials, and the resultant two-way exchange of information is indeed helpful.

Some standardization processes and administration are of local concern. Thus provincial and state bodies are responsible for much grading legislation and enforcement, and integration of such programs is easier in Canada, with only ten provinces, than in the United States. Lastly, and of great significance, is the fact that Canadian lobbyists are somewhat less numerous and powerful than those in Washington.

Canada's successful experience with mandatory quality control, qualified by the unique adaptability of Canadian concerns to such a project, may well form a model for examination by countries contemplating a similar move. She has pioneered effectively in a field which today is of prime concern to all who are interested in the maintenance of quality standards and in a system of distribution which is founded on an equitable basis for producers, distributors, and ultimate consumers.

The advantages of Canada's system of grade labelling are self-evident, but its success continues to hinge upon the honest and intelligent use of quality grade marks on the part of the Canadian people. The program *can* help to ensure for us the continuance of the standard of living we now enjoy.

Administration of a Collective Bargaining Agreement

Wallace H. Clark

Efforts to promote and maintain good industrial relations cannot be confined to the bargaining table. The really productive effort to this end which management can make comes through sound administration of the agreement after it has been signed.

PROBLEMS arising out of the administration of a collective bargaining agreement are often largely of our own making, and the element of human error and dubious motivation can be found on the management side of the table as well as on the union side of the table. That is obvious, I know, but I have sat through hour after hour of personnel conference where it sounded suspiciously to me as though management never made any mistakes and, if the unions weren't so miserable and disagreeable, there would never be any human problems in industry.

Unions do make their fair share of problems because to a degree it is their business to make problems and they accomplish their business purposes with considerable skill. But I suggest to you that it is probable that, if we can really get at the truth of the matter, we would find that for every difficult problem which has been union-inspired, there has been another problem, a human problem, caused through faulty handling of a personnel situation by management.

The Nature of the Agreement

Perhaps the first question faced in the administration of a collective bargaining agreement is whether or not it is to be regarded as a detailed, all-embracing legal document or whether it is to be regarded as laying down policy as it applies to working conditions during the period of the agreement, but not as a document complete in every detail and providing for every possible contingency.

The first view is increasingly popular. The collective bargaining agreements of many of our larger companies, both in the United States and Canada, are becoming more lengthy, more detailed, more complex, more difficult to read, and more difficult to administer. There are still many fortunate companies which get along with a very brief collective bargaining agreement, plus a whole series of verbal understandings.

Generally speaking, the larger companies and the larger and more aggressive labor unions, as opposed to trade unions, however, like to have as much as possible down in black and white. This is partly because it is difficult to win cases before an impartial umpire on the basis of a verbal understanding. Furthermore, verbal understandings have a way of getting lost with changes in management and union committees. The written word is certainly more persistent.

Nonetheless, I have yet to see a collective bargaining agreement which sets out, in complete chapter and verse, all of the working conditions which apply. I do not believe it is possible to write a collective bargaining agreement which covers all of the situations which will occur during its currency. I have seen lawyers put in exhausting hours of work, endeavouring to write a collective bargaining agreement which would be a thoroughly satisfactory legal document from a lawyer's point of view. The attempts of which I have knowledge have been failures. Furthermore, while collective bargaining agreements are my business, I found I couldn't understand some of the complicated language which the lawyers used. How, then, could I expect the foreman and the employee to understand these documents?

Moreover, even the best of lawyers find it difficult, if not impossible, to use the English language without at times being ambiguous. Impartial umpires are, of course, quick to pick up these ambiguities and they may affect either the union or the company adversely in a particular situation. In a ruling which Louis Fine made when he was acting as an impartial umpire some years ago, he said, "In view of the fact that these questions arise out of ambiguity in language of the agreement for which both parties are responsible, I disallow any claim included in the grievance for compensation for time lost. The ruling having been made, the parties can in future guide themselves accordingly." Therefore, while very careful drafting is a prerequisite to sound administration, those who administer collective bargaining agreements have no choice but to regard them as documents which set out many of the rules but not all of them.

There is a tendency on the part of both unions and management to twist the wording of collective bargaining agreements, after they are signed, as occasion makes some particular section seem onerous. The difficulty of saying exactly what you mean in an agreement and the ease with which the original intent of the sections can be twisted after an agreement is signed are remarkable.

Role of the Supervisor

A whole generation of sea lawyers and the Philadelphia kind has grown up within the unions and, unfortunately, within management. This is human and natural, and will continue; nevertheless, adminis-

tration of a collective bargaining agreement by technicality is not good administration. It is a by-product of a system of using impartial umpires to settle grievances. It is also a significant commentary on the influence of the front office on labor relations, as opposed to the influence of the lower ranks of operating management who meet personnel problems at their source.

Administration of the collective bargaining agreement is faulty if it is not predicated upon the importance of the relationship of each employee with his immediate supervisor. If you are supervising a group of machine operators in a production bay and one of your operators comes to you with a grievance because some steel stock is badly piled too close to his machine and he is afraid it is going to fall over on him, you are not going to fob him off with some technicality. Chances are you will take a look at that stock and if you think it is dangerous you will have it moved. If you don't think it is dangerous, you will try to demonstrate to him that it isn't and get him settled down on his job again. But, if the administration of working conditions, as set out in the collective bargaining agreement, is entirely dependent upon some remote personnel department or industrial relations division, that man may put in a grievance in writing, to which he ultimately receives a skillfully written reply. This reply will perhaps tell him that the company's methods of piling stock are approved by its material handling engineers and that it is management's prerogative, under Section 4x of the collective bargaining agreement, to determine the locations on which stock floats are to be placed. All of this might be quite true, but the man isn't worried about management's prerogatives — he is worried about a pile of steel which he thinks is going to fall over on him. The greater the reliance which is placed upon management at the foreman level for the administration of the collective bargaining agreement, the better chance there is likely to be of a really sound and practical human understanding in the business.

Foremen Must Be Trained

It follows, however, that if the foreman or equivalent management is to be the real administrator of the collective bargaining agreement, it isn't sufficient for us to go to conventions from time to time and agree with one another that the foreman has an increasingly complex job and that his lot is not always a happy one. Nor is it sufficient to give him concerted "you know what" when he makes a mistake which tangles up labor relations and probably costs the company money.

Most agreements today are complex, sufficiently so that all larger companies and many smaller ones find it necessary to maintain specialists to negotiate them and assist in their interpretation and administration. Even these so-called experts don't always succeed in keeping the agree-

ment straight in their minds. They are not always consistent in their interpretation of a given section and it isn't very difficult to ask them questions about their agreements which have them "hanging on the ropes" and stalling for time. Yet, they operate more or less from the relative security of the administrative offices: the foreman operates on the floor amid the din of the machines under the pressure of the immediate problem and is frequently squeezed unmercifully between the union and his own associates in management. He needs help. I believe that it is not possible to get effective administration of a collective bargaining agreement unless a real effort is made to teach the foreman what it is all about and what is expected of him in the administration of the agreement.

Following completion of negotiation of our present collective bargaining agreement with International Union, UAW-CIO, with respect to our hourly rated employees in Windsor, we gave each of our foremen a copy of the agreement and told him that it was our intention to examine him on his knowledge of the agreement, particularly with respect to the sections on seniority and certain other major provisions. There were twelve questions on the test which we gave to all members of manufacturing division supervision. We endeavoured to make the questions practical and we redrafted them a number of times to avoid having them unnecessarily difficult. The questions were straightforward and required factual answers. Judgment was not involved. The supervisors were permitted to have their copies of the agreement with them during the test.

No one gave correct answers to all twelve questions and a number gave incorrect answers to at least half of the questions. These facts are mentioned here to emphasize that there can be no reasonable hope of sound administration of a collective bargaining agreement by supervisors who do not understand it.

Obviously, there is a great need, at the conclusion of any set of negotiations, for thorough instruction at all levels of supervision as to the terms of the agreement. Every attempt should be made to find the real trouble spots in the agreement prior to negotiation; if line supervision is asked for its views as to what changes should be made in the old agreement, then of course the instruction on the terms of the new agreement should include an explanation of what happened to these suggestions.

Some of the suggestions which come from line supervision are desirable from management's point of view, but they may not be politically realistic. By this I mean that some of them would be impossible to attain because the union would never agree to them without a prolonged and bitter battle. Or, they may be of such a nature that while they could probably be attained, they would irritate the union and make the attainment of other more important objectives extremely difficult. Naturally,

however, line supervisors would be irritated and critical of the Industrial Relations Division or Personnel Department if they received no explanation as to why the company did not press some of their suggestions.

This instruction of supervision in the new agreement is not likely to be effective unless it is planned by someone with a good working knowledge of training principles and problems and preferably someone who has sat in on the actual negotiations. Many of us make the mistake of assuming that the line supervisor will understand most of it anyway and, as a rule, we do not allow sufficient time to teach him more than a few points about the new agreement. Frequently we don't know for sure which points we do get across. I might mention in passing that, in addition to meetings with supervision, we have found it helpful to put the changes in the new agreement in heavy black-face type.

Most labor relations men take it for granted that if they tell a supervisor something, that's all that is necessary, but it has long since been proven that we learn faster if the teacher uses visual aids as well as the spoken word. It pays to consult training men before rushing into instruction on a new agreement. If you have to do your own training, it would pay you to study this problem.

Adequate Staff Important

A common problem which hampers the administration of many agreements arises from the fact that we industrial relations people constitute an overhead burden and we are not able to prove our worth by accounting methods, upon which all of us businessmen must rely to a greater or less extent. To put it bluntly, many industrial relations organizations are understaffed. They simply do not have the staff to handle administrative detail effectively. To my mind this is every bit as bad a practice in a business as that of the Billing Department's being too short-staffed to handle the company's accounts accurately and on time — and perhaps it is a worse practice.

I am frequently asked how one determines the staff which can be justified as an industrial relations expense. Since the industrial relations operations constitute a burden or overhead cost, what control should one use to keep the cost within reasonable bounds? Studies by the American Management Association have shown that the most commonly accepted rule of thumb in American industry is a ratio of one industrial relations employee per one hundred employees on the total roll. This does not include plant protection staff, medical and nursing staff, nor the staffs of company-operated restaurants. An overall study of American industry in 1951 showed an actual ratio of .85 per 100. I know of no comparable studies which have been made in Canada, but I would expect that a Canadian study would show that many of our industrial relations organizations are staffed below this ratio.

Handling Grievance Procedure

Shortage of staff may show up in various ways. The most common is a needlessly slow grievance procedure. It must be considered a serious administrative fault if grievances do not flow through a system at the rate the collective bargaining agreement calls for, irrespective of the reason, and the reason is almost certainly either faulty supervision and hence carelessness, or, more probably, a staff shortage.

It is asking far too much of human nature to expect a man who files a grievance to take a charitable view of his company if that grievance is not answered promptly, at least within the time limits established in the collective bargaining agreement. The grievance procedure is the heart of the agreement. It is tied in, in my opinion, with the basic reason for the union's presence in our companies. If the grievance procedure is not administered in such a way that grievances are dealt with promptly and fairly, then this is an administrative failure so serious that nothing else which the industrial relations staff does is likely to overcome it.

Sometimes, however, grievances are dealt with promptly, but shortage of staff, or at any rate shortage of skilled staff, shows up in inadequate investigation of the grievance. In my opinion, this investigation cannot be performed effectively by any other agency than the industrial relations staff. Other members of management may, of course, conduct an investigation of a grievance. The supervisor directly concerned frequently makes an investigation, but no industrial relations division or personnel department worthy of the name should be content to handle a grievance without making an independent investigation. If a company uses the grievance procedure merely to reaffirm the position of supervision, then the grievance procedure serves no useful purpose. Neither the union nor the employees will trust it and it is likely to make more trouble than it settles.

The first essential of a good grievance procedure is trained and fearless independent investigation of the cause of the grievance. A staff shortage in this most important part of the industrial relations organization cannot, as a rule, be cured quickly. The mere addition of a man to the investigation staff is usually not sufficient. It has been my experience that it takes at least a year to train a competent grievance investigator and most of the men who have had this training in our company in the past few years have been at least 25 to 35 years of age at the time of starting this work and most of them have been university trained. In my opinion, this is probably the most valuable training which can be obtained within the industrial relations division and, consequently, it is extremely difficult to hold a man on this type of work. Through his investigation of grievances, he comes in contact with almost all of the problems of industrial relations. These include labor relations problems, medical prob-

lems, safety problems, employee services, etc., which give him an on-the-job training of a type invaluable to him and the company.

It is quite possible, of course, to have a staff sufficiently large to administer a collective bargaining agreement effectively and still do a poor job. Effective administration requires a keen sense of responsibility on the part of all concerned, both the direct administrative staff and line supervision. This, of course, will only be present if there is effective executive leadership. It has been my experience, however, that if industrial relations personnel are encouraged to take responsibility and if a high standard of performance is demanded, the majority of those in industrial relations work will approach their job with a dedication which belies the sour stomachs and nerve-wracking frustrations which all too frequently are their apparent reward.

Need for Consistency

One of the main reasons for having a central administrative staff to deal with the collective bargaining agreement, even in large corporations where many of the industrial relations operations are decentralized, is to insure consistency in the handling of similar problems. Most administrators who have had occasion to conduct or take part in negotiations with unions would probably agree with me when I say that the unions are essentially opportunist. They talk of what they call "principle matters". Of course they have definite long-range objectives, but their strategy and tactics in negotiation are boldly opportunist.

It is extremely tempting for management to operate on the same basis and there are times in actual negotiations when this may be justified, but, in the administration of a collective bargaining agreement, you cannot afford to be an opportunist. You must stand for the principles of fairness and justice and act accordingly.

It isn't half so easy as it sounds. One line supervisor, who is a modest, moderate type of man, is faced with a certain grievance. He asks the industrial relations organization for advice and he takes the advice he is given. The next time that particular problem arises, the supervisor directly concerned may be a man of monumental stubbornness. By the time the industrial relations organization hears of the problem, he may have already committed himself to a course of action which is wholly inconsistent with the previous decision on the same type of problem. The industrial relations staff may be very tempted to let him have his way, even if they know from experience that this will almost certainly lead to future trouble. Everything possible must be done to insure that similar problems are dealt with consistently from time to time as they arise. Dissatisfaction and bitterness are sure to result if you are harsh in some instances, temperate in others, and weak and vacillating in still others.

Flexibility in Administration

At the same time, however, you must beware of considering one problem akin to another without very careful investigation. A friend of mine, of long experience in industrial relations work, once had an assistant who was forever trying to handle industrial relations administrative problems by rule of thumb. He would watch my friend handle a certain grievance case; then he would say: "That's fine, now I'll know what to do about that type of case in the future." Later, another case would arise which the assistant considered identical and he would be very puzzled because my friend would deal with it in an entirely different manner. He could not appreciate that while the two cases, on the surface, were similar, careful study showed that there were circumstances which made it quite proper to treat them on an entirely different basis. Even where two disciplinary offences are identical, the penalty warranted by the action of one offender may be quite different from the penalty warranted by the action of the other, because of their past records. Nonetheless, there is a tendency for those who administer discipline under the collective bargaining agreement to resort to rules of thumb in handling similar offences. Our courts are scrupulously careful to consider each offender's previous record, and while disciplinary offences in a plant are, as a rule, much less serious than offences leading to criminal prosecution, employees are entitled to a careful consideration of their previous records.

Not infrequently, a grievance is based on what is really an error on the part of a foreman. Probably we have all known occasions on which such a foreman was quite prepared to admit his error and adjust the grievance. Sometimes, however, because a foreman is frightened of his superintendent, he endeavours to cover up the error and struggles to bluff his way out from under the grievance. The administrator of a collective bargaining agreement must be on the alert for such situations. On the other hand, the foreman may welcome help and it is important to labor relations that he should get it.

In much of what I have said you will have observed that I favour the administrator who is capable of a reasonable flexibility of mind. It is sometimes a mistake to stand on one's rights too firmly when administering a collective agreement. A certain course of action may be quite right in that there is nothing in the agreement to prevent it and yet it may be quite wrong in terms of promoting stable and productive relationships between management and employees, which is the objective of all industrial relations administration.

I am often asked what are the problems that lead to grievances in a manufacturing industry. It is a fair question and, on the basis of my investigations, I think the answer is rather surprising. Out of a total of 631 grievances which were ruled on by an impartial umpire at Ford of

Canada in the ten years — 1942 through 1951 — 243 concerned lost time and overtime. This is by far the largest single group and you will notice that the problem is comparatively minor. The next largest group is 81. These were grievances concerning wage rates, which I would consider somewhat more serious. Only 59 of the 631 grievances arose out of discharges, although this, on the face of it, should be the most important matter on which a man could grieve. Of the rest, 55 alleged misinterpretation of contract, 47 protested a penalty other than discharge, 44 had to do with work classifications, and the remaining figures are comparatively insignificant.

When I say this is surprising, I mean that some of the things which, during negotiations in that decade, had been driven home to me time after time by union negotiators, are hardly mentioned at all by the employees themselves in actual grievances. For instance, I have listened to hours of argument on the terrible evil of supervisors working, yet out of those 631 umpire cases, precisely one had to do with a supervisor working and that was a case in 1943. Time studies are believed to be a fruitful source of trouble between management and employees, yet in that ten-year period we had only three umpire cases which were concerned with time study figures. One might expect promotions, transfers and demotions to be frequent sources of disagreement, yet in ten years we have had 27 umpire cases concerning promotions, a further 27 concerning transfers and 10 concerning demotions.

The point I want to make is that none of us can afford to guess what our problems are in the administration of a collective bargaining agreement. Simple statistics are very helpful in keeping policy based upon facts rather than upon fancy. Particularly in larger plants, however, statistics are not enough, and the larger the plant, the more true this is, in my opinion. Statistics should be kept and used, but human relations cannot be maintained on a steady and amicable basis between management and employees if their administration is entirely dependent upon control charts and factual analyses.

Contact Between Administrator and Worker

It is absolutely essential for the executive having the industrial relations responsibility to get out into the plant and know at first hand at least the principal personalities and conditions, both in management and in the union, which will determine the status of labor relations in the plant. Ten minutes spent listening to the chairman of the union committee in a plant may be worth hours of impersonal conjecture concerning human relations in that same plant. When I say listening to the plant chairman, I don't mean listening to him while you sit in your cosy office across the desk from him — I mean listening to him in the plant, in his office if he has one, but, in any event, in the plant.

Some members of management who deal with union officials have a tendency to treat these union officials a little bit as though they were children. I have seen executives who should know better just a trifle condescending in conversation with union representatives. If I can detect this, you can be sure the union representatives can detect it, too. For all I know, there may be adults in this world who like to be treated as children, but I have yet to meet a union representative who was one of them. Like you and me, they respect the man who puts them on an equal footing, and I mean equal. It is every bit as bad to act as though you were half afraid of them as to act as though they were wards for whom you knew you would be held responsible by the Children's Aid Society.

The objective of an industrial relations man is to promote harmonious and productive relationships between the employees and management. To accomplish this, it goes without saying that, once a collective bargaining agreement has been reached, the problem is certainly not how to get rid of the union but how to get along with it.

The first responsibility of management at all times and in all fields is leadership. Leadership is a positive thing. It is not possible for anyone to give effective leadership in the accomplishing of the industrial relations objective unless he has a positive habit of mind. Negative, backward-looking thought, full of desire for the good old days when unions were of little consequence, tarnishes business leadership and makes harmonious and productive relationships almost impossible to attain.

Newfoundland and Union

Eric A. Seymour

That Newfoundland has gained more than she has lost by union with Canada is the contention of Mr. Seymour, who anticipates increasing interest in and understanding of Newfoundlanders by the rest of the Canadian people.

AFTER only three short years of union for Newfoundland with Canada, it is impossible to accurately evaluate the effect of this merger on the overall Canadian economy, or on Newfoundland itself. Yet, looking at the tremendous economic consequences of union between Newfoundland and Canada already apparent, and trying to cut through officialdom's entangling red tape, it does seem that both parties to the merger have gained substantially.

Newfoundland's Contributions to Canada

Probably the greatest and almost instant result of the union was the bringing of the island's great fisheries to merge with Canada's, making the Dominion not the tenth world producer of fish as previously, but the sixth. Canada's fishing grounds are now the most extensive in the world. On the Atlantic, the addition of Newfoundland's fishing areas spread Canada's East Coast grounds over a wide expanse right up to Labrador.

In the pulp and paper industry Newfoundland contributed the largest single integrated mill in the world — Bowater's, at Corner Brook — and the older but slightly smaller Anglo-Newfoundland Development Company plant at Grand Falls. Both these plants turned out newsprint and sulphite which topped in value the returns from the new province's fisheries. Apart from increased production, prices were higher and are still being maintained, making the forest industries of growing importance in Canada's economy.

Of the more than $35 million coming from the forests, a large segment was in American currency because of the increased demand for newsprint in the United States. This badly-needed U.S. cash went into the Federal dollar pool to help Canada over the financial hump, and no doubt contributed in a small measure toward the ultimate decision to set Canada's dollar free in the money markets. Many of Newfoundland's fish sales also were made in U.S. currency, which pleased the Federal Government, although the result for the new province may not have been

as happy as before confederation when the islanders bought an enormous portion of their imports in America with always a favorable balance of dollars on hand to cover the cost.

Disadvantages of Union for Newfoundland

In some respects the merger brought severe shocks to Newfoundland. The all or nothing policy involved which made Newfoundlanders Canadians overnight and stripped them of many of their own previous self-governmental chores with the onus and administration transferred to Ottawa created some confusion at first. Newfoundlanders began feeling that they were losing some of that precious independence that had grown up with the island's lengthy insularity.

A more tangible loss was a number of sources of revenue now enriching the Federal coffers. Many Newfoundlanders believe that the island would be better off financially today if it had not merged with Canada. The government would be wealthier by the customs, postal and income taxes and other revenues now collected by Ottawa. On the other hand, there is no way of actually checking this prediction because the figures for these services are not available locally, the Federal branch offices concerned not liking to divulge this information.

Although all Newfoundland workers may be getting more money now than they did in 1948-49, the cost of living has soared. Most of Newfoundland's imports now come from the rest of Canada and there is naturally a tariff on American and British goods. The loss of some of the American trade brought personal hardship to Newfoundlanders. The price of tobacco, for example, nearly doubled — a serious blow to the fisherman, lumberjack and miner who use vast quantities of tobacco. Motor cars too became dearer, and somewhat harder to get, since Newfoundland before confederation had its own quota.

Newfoundland is likewise sharing in the heavier burdens that have been placed upon the shoulders of all Canadians in the tremendous outlay for defence and Mr. Abbott's unpopular taxes, especially on individual incomes.

There are occasional kicks against some of the regulations brought in by Ottawa which seems to Newfoundlanders so far away. Some of the wild life regulations promptly instituted by the Federal Government had to be modified because it was found that scattered Newfoundland communities looked for their daily bread at certain times of the year to the very seabirds that Ottawa said could not be shot regardless of the need. The immediate entry into Newfoundland's law-enforcing circles of the R.C.M.P., who are charged with maintaining law and order in all parts of the province except St. John's, brought not only a new criminal code, but a slightly harsher administration of justice. Game laws were rigidly enforced, smuggling and "moonshine"-making were traffics not condoned, and every piece of legal rule laid down was rigidly enforced.

Newfoundland's Gains by Confederation

Gradually, however, the pattern of the Canadian way of life is taking shape in the new province.

Increased Spending Power

Among Newfoundland's gains by union with Canada were the many additional handouts such as family allowances, increased pensions, Federal aid for housing on a 75-25 per cent basis, and a wider marketing system through Canada's extensive trade and commercial operations. Payments to Newfoundland from Ottawa for family allowances for the fiscal year ending March 31, 1952, totalled $10,800,000. This money meant a flow of entirely new revenue into homes in all parts of the island, some of which had not seen hard cash for many years. (Although the barter system in Newfoundland's fish trade has been dying a slow death, there are some places where fishermen still receive goods in kind in lieu of cash for their services.) Old age pensions contributed $7,000,000; veterans' allowances $2,800,000; unemployment insurance $1,800,000; the Canadian Government $10,500,000. The latter amount represents expenditures for Federal workers and for public works being completed in Newfoundland by Ottawa.

What the family allowances and increased old age pensions have done for the economy of Newfoundland is little short of revolutionary. In an economy which has been for hundreds of years based on the merchant-barter system, this inflow of ready cash has put more money into the hands of the purchaser than ever before in history. From this spending power the fisherman, lumberman, miner and clerk have acquired a new independence. As a result, children are better fed, better clothed, and better educated. In addition, business has benefited. Dealers are now enjoying good business conditions all year round. Finally, the Government handouts have to some extent evened off the seasonal slump, so prevalent in a fish economy.

Development of Natural Resources

Union has added a definite "plus" factor to Newfoundland's present economic strength and future possibilities. Canadian-owned Bell Island iron ore mines which two years ago were in the doldrums and headed for partial shutdown, are booming again. Dominion Steel and Coal Corporation, the mines' owners and operators at Sydney and Montreal, have received additional orders from Britain with occasional orders from the United States, while the Canadian requirements have also been increased. Not only was the mine which shut down last year reopened, but heavy expenditures running into several millions of dollars were sanctioned by the company for modern conveyor belts and other equipment designed to amplify production. Bell Island's fortune should, of course, continue to shine as long as there is trouble on the international front. The mine

at Buchans with its copper, lead and zinc concentrates, is having a new lease on life because of newly-discovered lodes, and like the fluorspar mine at St. Lawrence is adding to Canada's over-all mineral wealth. Roaming all over the province are numerous prospecting teams, many from reputable Canadian mining companies. They have in several instances struck rich copper, lead and other ores, and contemplate developing the properties very soon. Some of the abandoned mines are now considered economic possibilities because of cheaper mining methods. The quest for ores is emphatically on, and the rest of Canada should hear of many mines starting production in Newfoundland this year. Asbestos and aluminum deposits are being looked for by reputable companies from outside with a view to development.

At present John Fox, well-known Boston financier and speculator, has revived interest in Newfoundland's long idle oil resources. Drillers have been working all winter at St. Paul's on Newfoundland's west coast and some of the old wells and Fox's new ones are producing several barrels a day. There is little chance of striking gushers, but the daily seepage into small wells in numbers will, Fox thinks, make the venture successful and profitable.

New Industries

The first provincial government under the leadership of dynamic J. R. Smallwood, with his slogan "develop or perish", is making remarkable progress on the industrial front. Many smokestacks have arisen in the past year over industries that had once been totally foreign to Newfoundland. The government's Economic Development Department, headed by Smallwood, aided by Dr. A. A. Valdmanis, well-known Latvian economist, has blueprinted a host of industries for Newfoundland. The first, a $3,500,000 cement plant, has already been opened and will start producing in the spring. The gypsum wallboard and plaster plant in the same place on the west coast of the island — Humbermouth — is also ready to produce. The birch plant is producing. All three plants were built for the Newfoundland government by German firms. The cement plant is presently being handled by a crown corporation but may be sold if a good offer is received. The gypsum plant is operated under the same plan, but the birch mill, manufacturing hardwood, doors, wallboard, etc., is being operated jointly by the government and Chester Dawe, well-known local lumber dealer and contractor, under the name, Newfoundland Hardwoods, Ltd. Under construction is a machinery plant which will employ 500 men, a cotton textile mill, fur dressing and dyeing plant, leather tannery, marine oil hardening plant, and leather goods industry. All are the result of Premier Smallwood's visit to Europe eighteen months ago when, through Dr. Valdmanis' introductions, he became acquainted with German, Swiss and other European industrialists seeking to establish themselves in the New World. To some of them,

the government gave loans on a fifty-fifty basis, the machinery being supplied by the promoters and local cash apparently being used to erect the buildings. With more industries promised by Smallwood, and the necessary cash unavailable, the government's good credit is being used to back bonds in order to get the plants started. What is happening is truly an industrial revival in Newfoundland which had long depended for its economy upon the fisheries and forests with a little help from the mines.

Significant in the industrial development aspect of union has been the apparent lack of interest to date by Canadian financial houses and others in helping the new province over the hump to prosperity. None of the big industries has yet attracted Canadian backing — although it appears to be in the offing. Of course the European "know-how" is extremely worthwhile and cannot be discounted, but in the near future it is hoped that the other Canadian provinces will be helping build Newfoundland's industrial might through sharing in the capitalization of some of the projected industries. One of the disappointments in union for many Newfoundlanders has been the lack of interest in Newfoundland shown by the rest of Canada, with the exception of sales elements, who have been combing the new province uninterruptedly since confederation in search of "prospects".

Nevertheless, confederation has been a tremendous moral boost for Newfoundlanders to stand on their own feet. The prosperity being enjoyed by the paper companies and the mining companies has spread more money around, while the heavy demand for newsprint, sulphite, iron ore, zinc and lead concentrates and fluorspar has tended to enlarge all payrolls.

Other Advantages

Other good things in confederation include the fisheries program, Federal grants-in-aid, cheaper rail fares, the trans-Canada highway, and the new Federal buildings. The Federal Department of Fisheries has a program for modernization, pricing, marketing, etc., and has granted subsidies on last year's catch. Train fares have been cut by 50 per cent since the railway was taken over by the C.N.R. The Federal building program in Newfoundland has just about started with R.C.M.P. stations and other public buildings blueprinted for this year. As yet there is no main Federal building in St. John's: all the branches of the various services are scattered all over the capital. Canada now operates Gander as well as Goose airport, a previously heavy drain on the local economy.

Best of all in union, however, is the new intercourse, the breaking down of old barriers, that separation caused between the two peoples. Newfoundlanders and the Canadian people are daily growing better acquainted and more accustomed to each other's ways.

Administrative Training and the Case Method*

R. K. Ready

"Experience is the best teacher" is a well-worn adage which should especially interest business executives who are faced with the problem of guiding their employees in the development of administrative skills or, indeed, of seeking self-improvement in this field. Mr. Ready reflects upon the theoretical foundation and practical applications of the relatively new case method of instruction. The personal nature of case discussion may well be applicable in many company training programs.

A year ago, a group of lower level supervisors drawn from a wide range of companies asked the University for "a course, any course, whatever you want to give which you think will be useful for us." The assumption, presumably, was that taking courses equals education. Another group from industry planning a series of educational programs recently asked the University to provide a man to lecture to them on the "principles and laws" of business administration. The assumption in this case seemed to be that listening to lectures on principles equals education for administration. A few months ago I talked to some personnel managers who were using a particular "canned" course in human relations for their supervisors. They were enthusiastic — "it gives us lots of discussion in our training sessions" — and were apparently assuming that discussion equals education.

The other day an executive from a large company mentioned that they were using cases in their supervisory training program. Further conversation revealed, however, that what his company used as cases and what I would call a case were not of the same species. Yet, his continued identification of his company's methods of instruction with the case method of instruction as I understand it seemed to suggest an underlying assumption that a case is a case. This same executive also asked an interesting question: "How do you bring authority to bear in the use of cases? When do you get around to telling the class what an expert's

*For many of the conclusions expressed in this article the author wishes to note his great indebtedness for the assistance and contributions of the students, teachers and colleagues at the University of Western Ontario School of Business Administration and the Harvard Business School, and particularly to Professor F. J. Roethlisberger of the Harvard Business School, on whom he has leaned considerably.

appraisal of the case is?" The assumption, is it not, is that telling equals teaching.

As samples of business thinking about administrative training, these assumptions disturb me. Questions of training — for whom, in what, by whom, and how — seem to have been thought through only half way; and executive training programs not only vary widely but also, in many cases, seem to be founded upon half truths. Business men say time and again that they want, in administrative positions, "men who can think", and in Canada there is a growing interest in and demand for formal training programs which will help develop such men. All too few of these formal training programs appear to be organized to achieve this ultimate objective. The men who set up training programs or those who approve training budgets are not getting what they want or even think they are getting. A detailed description of a training program which did not meet the needs of the trainees, which appears in a recently published book,[1] adds further weight to these suspicions.

Scholarship and Administration

I think the character of our general formal education plays a significant role in the thinking of business men who must mould and approve training programs, both in industry and in the universities, for the development of administrative talents. By and large, this formal education consists of memorizing dates, names, places, poems, formulae, structures, principles. The chief vehicles for imparting this knowledge to students are the lecture and the reading assignment. The university degree requires also that students take a variety of courses, and the elective system even says to the student "any course". The immediate objective for the student, passing the examination, is not particularly dynamic; the course is the thing. Here is a precedent for courses, lectures, and principles which are injected into so many training programs, including those established to train administrators. And why should business men not be impressed with this method of training? It turns out, with apparent success, "educated men". Let us say instead, however, that it turns out "scholars", a word I regard as equally as complimentary as "educated men", but which I prefer because it enables me to point to another educated man, the administrator, for whom conventional pedagogy is not as adequately designed.

The administrator may or may not be a scholar. A fund of factual knowledge may well be useful, even indispensable, for a person holding an administrative position. The banker, of course, must know financial instruments, the comptroller his debits and credits, the production manager the technology of his industry, the market analyst statistical

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[1] A. Zaleznik, *Foreman Training in a Growing Enterprise.* Harvard Business School, Division of Research, Boston, Mass., 1951. (Comment concerning this book appears in the Book Review section of this issue. Ed.)

techniques. It is not such scholarship, however, which distinguishes these men as administrators. The administrator seems to be distinguished not so much by his knowledge of facts as by his use of facts. He is the man who understands the potential meanings and relationships of facts — those pertaining both to persons and to things. On the basis of the assembled facts, he makes responsible judgments and provides within the organization an atmosphere in which his decisions are communicated and resultant action is taken. This is not so much scholarship as it is skill in thinking and behaving in new situations. The person without this skill, with only scholarship, remains a specialist in the business organization. As noted by Gilbert Ryle, "A soldier does not become a shrewd general merely by endorsing the strategic principles of Clausewitz. He must also be competent to apply them." An athlete becomes great because of his skill in thinking and behaving appropriately in action, in the game, not simply because he can verbalize the rules, regulations, and fundamentals of the game. The administrator is, in many ways, much like the athlete. Why we have attained such a peak of efficiency in training the athlete and encounter so much waste motion in administrative training is something of a mystery. Perhaps we have not "emphasized" administration enough.

Certainly the problem of teaching administrative skills is a difficult one. When we talk about administrative skills we are talking about the ways a man thinks and behaves, which are both very personal things and, even when a man feels emotionally free to talk about such activities, difficult to verbalize. Scholarship is not quite of this character; the concentration is on the techniques, principles, and words. Probably books, lectures, courses, examinations, and the other accoutrements of conventional pedagogy, with only some emphasis on the feelings and thinking habits of the student, can develop scholarship. These pedagogic trappings are, by and large, external to the individual, but so are the things being taught. I only want to emphasize that the two classes of education, the one in scholarship, the other in administrative skills, require different pedagogic approaches. Trainers must keep in mind the personal nature of administrative skills in thinking through the questions of administrative training and in understanding differentiations necessary in this area of education from that which may be appropriate for teaching scholarship. I strongly doubt that what trains scholars is what trains administrators.

Some Problems Inherent in Teaching Administrative Skills

The ways of thinking and behaving, which I see as at the heart of the administrative skill, come to individuals as "lessons" from experiences, both concrete personal activities and experimentations and associations with groups and other individuals. Some "lessons" come from activities actually experienced; others, from communication-experiences,

primarily from social groups and "idols". Some children learn that fire can burn their fingers by actually putting their fingers in a fire; others learn the lesson by believing what their mothers tell them about fire. People experience thousands of activities and communications and form nearly equally as many conclusions about the lessons their experiences have taught them. That experience teaches there is no doubt, but people learn from experience a variety of lessons. As Professor Roethlisberger has stated, "The school of hard knocks makes criminals as well as business men". City traffic produces skillful drivers and people who will not drive at all. Note the variety of conclusions experience teaches people about Jews, labour unions, women in industry, authority, advertising, stocks vs. bonds, time study, "middlemen", college professors, and so on and on. *And note how forcefully people cling to the "lessons" they have learned from their experience.*

By the time businesses and university schools of business administration get men in their training programs, the trainees have already acquired and represent a vast array of ways of thinking and behaving and of conclusions which they have learned from their experiences. Some of these habits and conclusions they are aware of, some of those they feel like questioning, some they would never think of questioning, and some they are not conscious of at all. The instructor, too, has formed his own ways of thinking and behaving and his own conclusions, all equally as *personal* and *important* to him as those of the trainees are to them, and probably equally as strange and unreal to the trainees as theirs are to him. Therefore, confusion and frustration — and probably in many cases boredom and rejection — could easily ensue should the instructor endeavour to "teach" his own ways of thinking and behaving and his own conclusions to the trainees. It takes a much different sort of authority than the authority of a position, be it training director or university professor, to get away with such efforts to tell another person how to think and behave and that his conclusions about effective behaviour, learned from his own experiences, are all wrong.

Teaching administrative skills, then, is complicated by the personal character of the thing being taught and of the way in which the lessons have been learned. Let me note two additional pedagogic problems in teaching people to be administrators. The first concerns what can be taught as an answer or principle of administration. No two administrative problems are ever exactly the same. No two administrators are exactly the same; no two companies are exactly the same; no two markets are exactly the same. There are similarities and uniformities, but in every case judgment must be exercised. We can achieve general agreement on the definitions of a stock and a bond, the eight primary functions of a manufacturer's agent, and the techniques of time study, but whether to issue common stocks or bonds, to use a manufacturer's

agent, to make time studies of certain jobs and how to use the data so gained are problems which require *judgment appropriate to the circumstances of the particular time, place, market, people, and organization.* The latter are administrative problems, and are never twice exactly the same. An answer, sold as "the" answer (whether it is or is not), to any such administrative problem reviewed in a training session is unimportant, because the problem will never be encountered by the trainees anyway, and also dangerous, because the trainees may think the answer is a general principle applicable to all situations which seem to them similar, which it is not.

A second additional pedagogic problem concerns the character of language. Words are only maps of a territory. Vocabulary does not make an administrator. The administrative skill is in knowing the territory — the people, the things, and the relationships. One of the problems with answers and principles is that they are more often words than actual situations. Words also have the disagreeable characteristic of meaning different things to different individuals. Experience has "taught" them these varying definitions of words. We have no quick assurance, therefore, that trainees "understand" the instructor's words or the instructor, the trainees' words. Too few instructors seem to behave as though they were aware of and dealing with this problem.

These are some of the problems of teaching and learning administrative skills. The thing being taught is very personal; it concerns, also, problems which arise, in their unique form, only once and are not duplicated. The strongest pedagogic tool, experience, is likewise very personal. Finally, our means of communication, words, have personal meanings as well. Education in the administrative skills must be student-centered, not subject-centered, if we are to achieve any sense of realism and any degree of success.

Experience does contain some useful lessons, but, since experience does not speak for itself, the onus for learning them from experience is on the student or trainee. Thus, education consists first in knowing one's own self and one's own experiences. The instructor cannot tell the trainee about himself. Each individual is the authority on himself. The role of the instructor is one of providing an atmosphere in which trainees can look freely and willingly at themselves and their experiences. Secondly, education consists in providing an approach or useful way of looking at one's own self and experiences. Since experience will not speak for itself, we must ask it questions. The atmosphere which the instructor seeks to provide must also, then, be one in which trainees feel inclined and inspired to ask penetrating questions of their own experiences and to seek new answers. Finally, education consists, according to my thinking, of new experiences, with the same atmosphere conducive to an awareness and questioning of the new as of the old experiences — concrete experiences, too, not just words.

The Business Case

One answer to the problem of administrative training I find in the use of the case method of instruction. A business case is a written description of an actual business situation. One objective of the case method is to get to the territory; the orientation is not towards maps. A case is not someone's word description of and conclusions about foremen or wholesalers or investment dealers as related to general business problems. It is a description, by a skilled case writer, of plant superintendent A's dealings with foreman F, of sales manager B's contracts with wholesalers H and R, of treasurer C's negotiations with investment dealer T about particular problems at particular times in particular places. The actual business case situation is a specific problem faced by a particular executive or group of executives at a particular time. These business situations are not just "dreamed up" by a case writer to illustrate some "point". They are found by going out into the business world and interviewing business executives and observing their operations. The case method is an attempt to deal with the concrete, not the abstract. My observations about learning skills of thinking and behaving from experience indicate that learning begins with concretions, actual experiences. The abstractions come only later, as conclusions from or generalizations about concrete experiences. The case method starts with that from which learning starts.

The business case is, of course, by necessity somewhat abstract, being, as it is, in words. We start, however, by saying that the words are to be about the concrete, an actual business situation. Prof. Paul Lawrence, a skilled case writer at the Harvard Business School, describes this "word problem" quite well.

> "A case might contain the sentence, 'Joe was a competent foreman'. Such a sentence carries an illusion of objectivity, yet we know that labelling Joe as competent is a subjective judgment that someone has made. We just do not know whether it was Joe's boss, his fellow foremen, Joe's subordinates, Joe's wife, or Joe himself who made the judgment. The case writer would move one step closer to a complete statement of origin, if he instead wrote, 'Joe's boss thought of Joe as being a competent foreman.' The case writer would be even more explicit if he reported, 'Joe's boss told the case writer on June 24, 1951, that he thought Joe was a competent foreman.'
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> The above example indicates that as a case writer becomes more explicit about the origin of his facts, these facts lose their illusion of objectivity and become more subjective and, some will argue, more vague. Yet this explicitness about origin represents a more complete job of reporting the situation and forces the student to face up to the subjectivity of most facts in a way that defines true objectivity. . . . Certainly the case writer can carry his explicitness about origin of data to a ridiculous point. (For example, 'On July 2, 1951, the case writer read on the official production record that the X Department had processed 5,192

> crank shafts in June, 1951,' instead of 'The X Department processed 5,192 crank shafts in June, 1951.') But the case writer needs always to think about how explicit he will be about the origin of his data. Most case writers err in being too vague rather than too explicit."[2]

The sort of thinking Prof. Lawrence recommends that case writers adopt in putting a case down on paper is helpful also in solving the problems of how to observe a business situation and what observations to include in a case. Failure to face, wrestle, and cope with these problems satisfactorily can defeat the very objective of the case method, to orient training around concrete situations, as much as poor writing of the observations can. The case writer who thinks in terms of writing such sentences as "Joe's boss told the case writer on June 24, 1951, that he thought Joe was a competent foreman" will, in his interviews and observations, be aware of the sources of his information and of his own role and relationships during his research. He is a person who knows himself, his own feelings and beliefs and prejudices, so that he can see and hear, as a result of his self-awareness, what other people are saying and doing. He is also a skilled observer and listener. As an observer his skill is much like that we sometimes test in a game, looking at a room or picture for thirty seconds and then writing down the name of every physical object we saw and remember. As a listener, his skill is first in so relating himself with the people he wants to observe and listen to that they trust him and are willing to be free and honest with him,[3] and second in making sure that he understands what they are trying to tell him, having some skills in helping them verbalize that which is either difficult for them to say or so obvious to them that they give it no or inadequate coverage. How much to observe and how much of that to include in a case are not easy questions to answer. Certainly the case writer will never have all the facts.[4] After experience in collecting cases and in using them in the classroom, he will acquire a "feel" for the information which will make a case. His honesty in research will keep him from biasing or restricting the observations he makes or reports in the case to help prove a point of his own. His sense of the ridiculous will keep him from "researching" and reporting ad infinitum. The final test is in the classroom, but his experience in the classroom himself makes his judgments better than random chance.

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[2]"The Preparation of Case Material" by Paul Lawrence, in *The Case Method Of Teaching Human Relations and Administration,* edited by Kenneth R. Andrews, to be published by the Harvard University Press in the fall of 1952.

[3]Part of the establishment of this relationship is related to the security a company is given in releasing confidential information. This security is usually sought by disguising the situation in the case and, in some instances, restricting the use of the case.

[4]This causes no necessary deficiency in the usefulness of case material, since part of administrative training is training in making appropriate decisions on the basis of not having all the facts. In actual experience, no administrator ever has all the facts.

The Role of the Instructor

The classroom test of a case is also a test of the instructor, and the case and the instructor cannot be separated easily. A poor instructor in the classroom cannot give a case a fair final test. The opposite is equally as true. The case instructor is not a lecturer — definitely not — no telling, no answers, no principles, no conclusions, no "word" from him. An illustration may clarify this assertion; it does not qualify it, however. A trainee may raise a question about the statistical computation of the DBS Cost of Living Index appearing in a certain case. In response, the case instructor may appropriately deliver himself of an answer or assign a reading, although the orientation of the "lecturette" or reading is in terms of the trainee's questions, not the instructor's own meditations on the "subject". Such an issue of scholarship is different from an issue concerning the wisdom of injecting comments on the Cost of Living Index into a labor contract negotiation by a particular executive at a particular time. The latter is an administrative issue, and the instructor's role is that, negatively, of "no lecturing". Administration cases deal very little explicitly with the first sort of issue. A case instructor should err, if he must, in the direction of assuming that cases deal even less with scholarship than they do.

The dangers and futility of lectures are too great. The case instructor does not lecture because of the personal nature of the administrative skill and of the vehicle for acquiring that skill. These problems of behaviour and of ways of thinking are problems trainees must work out for themselves, and any of a number of ways of thinking and behaving may be appropriate and effective, *depending on the person, the circumstances, and the time.* Some individuals jump quickly to conclusions, some appropriate, some not; others plod pedestrianly through to decisions, again some useful, some not.

The proper role of the case instructor is, rather, one of the skilled listener and questioner. As a listener, he is alert to attitudes and feelings expressed by the students. Feelings truly should and do enter the "rational", "intellectual" environment of "true education". If the subject is advertising, a multitude of attitudes and feelings arise — that advertising is immoral, that it is silly, that it can accomplish fantastic wonders in the promotion of a product. If the subject is securities, the range of feelings about the aspects of risk of bonds vs. stocks is fascinating. Feelings about the validity of figures are multiple (often closely correlated, perhaps, with the individual's own facility in the use and manipulation of figures). The same multiplicity applies with regard to attitudes about superior-subordinate relationships. It is difficult to recall an administrative issue which an individual ever thinks through devoid of nonrational attitudes and feelings. Trainees do often imagine that they are thinking rationally, but the true way of achieving objectivity and ration-

ality is through first recognizing the non-rational components of one's ways of thinking through problems. It is a matter of raising to the surface of consciousness and awareness these non-rational attitudes and feelings for rational inspection and appraisal. In this struggle the case instructor can help the trainees. He listens for the attitudes and feelings and reflects them back to the group for appraisal. These reflections are in terms of statements or questions, often repeating many of the same words used by the trainee himself. I think the case instructor can learn something about a useful role for him to play in a study of the so-called non-directive or client-centered therapeutic interview used by some psychologists.[5] The case instructor establishes an atmosphere in which the habit is one of recognizing and questioning personal attitudes and feelings. He sets this atmosphere by himself listening for, reflecting and questioning attitudes and feelings. By his behaviour, he sets the tone.

The case instructor not only seeks, however, to help trainees know themselves. They must also know administrative problems and be able to think through to decisions. The instructor keeps the trainees oriented toward the territory. This means that he must know himself as well as the case — the task of the trainee is to search the territory, not the instructor, for evidence and "answers". The instructor keeps himself out of the territory; he must be aware of his own attitudes and feelings so that, in his questioning of the trainees about a problem, he will know his questions are about the situation itself, not about the opinions he has formed concerning it. He has a responsibility, too, to lead the trainees through their analysis of the territory to a business decision for future action. Professors Hunt and Williams state this function of the case method very well in the introduction to their case book.

> "In regard to advantages that we feel can be derived from the use of case problems, perhaps their greatest value is that they require the student to work through to a recommendation for action. . . . The need to reach a conclusion from the facts at hand and to discuss it intelligently is a great force in learning, helping to provide that elusive quality of 'depth' that is often missed when learning is restricted to the reviewing of facts and views that others have codified. . . . Judgment must enter into the process of decision making."[6]

Teaching Techniques With the Case Method

As an aside, it may be noted that cases are used in some courses designed to teach a rather large bulk of substantive knowledge, such as government regulations affecting business and approved techniques of job evaluation, cost accounting, security analysis, and the like. Probably

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[5]See the works of Carl Rogers, *Counseling and Psychotherapy,* Houghton Mifflin Company, 1942 and *Client-Centered Therapy: Its Current Practice, Implications, and Theory,* Houghton Mifflin Company, 1951.

[6]Hunt and Williams, *Case Problems in Finance,* Richard D. Irwin, Inc., 1949.

the chief reason for using cases in such scholarship courses is that they put the substantive material in a setting of reality, which helps stimulate the trainees' interest and belief in what is being taught. Such cases may also place the factual material in the setting of a total situation, which involves the administrative aspects of the use of the facts and techniques. Some technique-or-fact-teaching cases are written with the administrative element omitted so that there may be concentration on the techniques and facts, but even in these cases the aura of reality still exists — the material still appears under the name of a company which has a real existence. These technique-cases have their usefulness just as do the cases which are used to teach the administrative skills and which slight some of the technique-fact element of the total situation. Even in the latter type of cases, without conscious "teaching" by the instructor, trainees inevitably acquire some substantive knowledge, such as a fair business vocabulary and a conception of the definitions and functions of a variety of business terms and agents. Developing such scholarship is not, however, the principal function of the administration cases.

It is important that the training director first decide what it is he wants his training program to concern itself with and then mould his methods of instruction accordingly. Cases can be used to teach some facts and techniques as well as administrative skills. They are particularly well adapted to teaching administrative skills, and in so doing I think there are fewer appropriate pedagogic substitutes[7] for cases than in teaching scholarship. To try to teach administrative skills with scholarship pedagogy, however, is the mistake many training directors are making. Some case instructors, too, are erring, both in writing and using cases for what the method cannot do — teach principles and rules for situations for which there are no principles or rules, except in the instructor's own mind — and in *not* writing and using cases fully for what the method can do — teach skills as well as techniques. The case method is, however, hypothesized on valid current clinical observations of the teaching learning process, and it does offer the potentiality, if appropriately applied, of success in administrative training, a potentiality which does not exist for more conventional methods of instruction.

Available Assistance in Establishing Case Method Programs

Perhaps many readers think that I picture the problems of teaching and learning administrative skills as unduly complex, and that my recommendation of the case method of instruction as a realistic answer to the problems poses an unreasonably difficult assignment. Professors McNair and Hansen addressed themselves briefly to such cries in the introduction to their case book.

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[7]Role playing is one additional answer which has been used successfully in teaching administrative skills.

> "Undoubtedly it would be easier for you to acquire so-called knowledge by the route of the textbook and the lecture. . . . Nevertheless . . . . the case method makes the difference between real education and merely passively acquired words and ideas . . . . real education should equip the student not just with book learning but with power to deal with situations, particularly power to deal with new and unfamiliar situations. Now that kind of power cannot be conferred. . . . It has to be acquired by painstaking personal effort."[8]

Certainly case writing and teaching demand skills in which no large number of men are today well versed and practised. There are a few case books in existence, published principally by McGraw Hill Book Company, Inc., and Richard D. Irwin, Inc. Professor Kenneth Andrews has reported in an article published in the September 1951 issue of the *Harvard Business Review* that there is "at least one qualified firm specializing in the development of case-training programs (which) will consider writing cases drawn from your own company experience." This firm is Harbridge House, Cambridge, Massachusetts. A few university schools of business administration are turning out students familiar with the case method who may well be of assistance to many firms thinking about this method of executive training. Their professors are also familiar with the application of the case method. Some universities also offer for business executives training courses which are founded on the case method of instruction. The literature on the case method is limited, but there is one excellent collection of articles, entitled *The Case Method of Teaching Human Relations and Administration,* edited by Kenneth R. Andrews, which is to be published by the Harvard University Press in the fall of 1952. All this assistance is encouraging, but it is not enough.

A Challenge to Business

The case method of instruction should not remain unexplored by business men on their own initiative. Professor Andrews reports eight organizations which he knows are experimenting with case method-type training for their executives — J. D. Woods and Gordon Limited, The Standard Oil Development Company, The Standard Oil Company of Indiana, The E. I. DuPont de Nemours Company, The Lago Oil and Transport Company Limited (of Aruba in the Netherlands West Indies), Cargill, Incorporated, The American National Red Cross, and The United States Navy.[9] More companies and schools of business administration should take up the challenge. I certainly hope, at the very least, that companies which are approached to permit case writers entree to do case research on some of their problems will be sympathetic to what we are trying to do.

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[8]McNair and Hansen, *Problems in Marketing,* McGraw Hill Book Company, Inc., 1949.
[9]"*Executive* Training by the Case Method" by Kenneth R. Andrews, *Harvard Business Review,* September, 1951.

The pedagogy is realistic and consistent with current observations on the teaching-learning problem. It admits that learning begins with the individual. It starts from a realistic source from which individuals can learn, concrete experience. It enables a concentrating and compounding of experiences by exposing trainees to a wide selection of vital case situations in less time than would be required on a business job and, through class discussions, to new verbalizations of and conclusions from experiences of many others. Admittedly the case method demands the use of not very extensively acquired and practised skills, is frustrating for students, and may seem to many readers to be a slow way to education. I think it is realistic, however. The challenge to business and to education is to face up to the realisms of executive training, not try to simplify the job by ignoring or denying them.

Book Review

FOREMAN TRAINING IN A GROWING ENTERPRISE

by A. Zaleznik, Harvard Business School, Division of Research, Boston, Mass., 1951.

Here is one doctoral thesis which makes easy and enjoyable reading for anyone. The content of Mr. Zaleznik's research was inherently interesting; to this he added a free and lucid style which produced a book of real value and pleasure.

Mr. Zaleznik spent several months sitting in, as an observer, on the training sessions offered by one company for its foremen and group leaders, and five months observing the human activities and foreman problems on a newly established production line. He displayed great skill as an observer and recorder of what took place. Fortunately, for the human appeal of his study, he had the opportunity to watch some remarkably interesting people and relationships, although there was nothing unusual or bizarre about the situations he observed. The foreman he observed was a true "man in the middle," "master and victim of double talk."

The purpose of Mr. Zaleznik's research was to determine the real problems a foreman had and was bothered about and to find out how useful the company's training program was in helping him deal with his problems. Mr. Zaleznik's foreman was concerned with specific problems of the moment — how to handle pressures on him that day by his boss, the methods people, the inspection people, the engineers, and the workers on the line. The company's training program concerned itself with abstractions — the psychology of motivation, loyalty, respect, and the like. Mr. Zaleznik's conclusion is obvious before he states it; the content of the training program had no relationship at all with the content of the foreman's own problems and obsessions. The foreman Mr. Zaleznik observed particularly seemed to be no more effective on the job by virtue of his participation in the training than if he had been absent from the sessions; in fact, since the training program helped to reinforce some of the foreman's own tendencies to think ex cathedra of the actual facts of situations, it probably harmed him.

Mr. Zaleznik's book, because it is such enjoyable reading, as literature, is an easy and rather painless way to learn a serious and profound lesson in the management of industry today. —R. K. Ready, Lecturer
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